COUNTRY CLUB

Daniel R. Gerst
Ball State University
September 1977 - May 1978

HARRISON WOOD
AN ENERGY EFFICIENT RESIDENTIAL AND RECREATIONAL COMMUNITY

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

NO. CC DRG
Table of Contents

TITLE PAGE

TABLE OF CONTENTS

INTRODUCTION

COURSE OBJECTIVES

STUDENT OBJECTIVES

PROJECT BACKGROUND

CLUBHOUSE BACKGROUND

CLUBHOUSE DESCRIPTION

1. PROGRAM

Sizing
Toilet facilities
Administration
Dining rooms
Cocktail lounge
Kitchen
Pro shop
Bar and grill
Locker rooms

2. SITE ANALYSIS

Topography
Solar and wind orientation
Relationship to golf course
Parking facilities
Service entrance
Site analysis

3. BUILDING TYPE STUDY

Introduction
Columbian Country Club
Midland Country Club
South Hills Country Club
Oakwood Country Club
Houston Country Club
Corral Ridge Country Club
Tucson Country Club
Oklahoma Country Club
Conclusions
4. SCHEMATIC DESIGN
   Clubhouse schemes
   Site layout
   Model

5. PRELIMINARY DESIGN
   Floor plans
   Roof plan
   Elevations
   Sections
   Model
   Landscape Architecture

6. FINAL DESIGN
   Upper level plan
   Lower level plan
   Elevations
   Sections
   Structural Axonometric
   Model
   Design Emphasis
   Landscape Architecture

7. APPENDIX
   Critics
   Resources
   Membership cost
   Club storage and cleaning
   Space sizing
   Average number of employees
   Construction budget

BIBLIOGRAPHY
Introduction

The design of a country club building offers a challenging problem to an architect and is particularly challenging to the student architect even though he designs without the customary encumbrances of a building committee and a construction budget. It is an excellent exercise in functional organization.

The resurgence of golf course and clubhouse construction in recent years along with the gradual obsolescence of existing clubhouse facilities throughout the country has brought the problems of efficient and economical clubhouse design into sharp focus. Not since the late twenties have so many new private clubs been forced, because of changing social and economic conditions, to assess the adequacy and efficiency of their building facilities.

It would seem as if there was a concerted effort in all our larger centers of population to preserve through the country club that touch with the open air of the country, which the progressive extension of our cities is making more difficult everyday.
Project Background

At the start of this year, Doug Reddington and I had decided that we wanted to do a joint project where he would be doing the residential design for a community and I would do the recreational design. After analyzing the site that we had previously wanted to develop, we found by talking with officials in Portland, Indiana that the site we had chosen would not economically facilitate our community.

At this time we decided that we would have to go to a new site where there would be a greater number of people that would need a community of this type.

A landscape architecture professor, Stan Geda, suggested to us that we talk to one of his students, Erik Ernstberger, who was looking for an architectural thesis student to help him develop a site near Louisville, Kentucky. After talking with Erik and reading a marketing statement about the site the three of us decided to proceed with the development of Harrison Wood Residential and Recreational Community.

A community of this type has been done before and usually the site is just outside of a large city. Since Harrison Wood would be just 20 minutes away for almost 1 million people, we have formulated through a marketing study that the 600 acre site would economically handle 2,000 housing units and a 800 member country club.

The corp of engineers for this area has proposed a reservoir that would cover 165 acres of this land and for this thesis the reservoir will be considered already built.
Course Objectives
The fifth year in architectural design is devoted to a three-quarter undergraduate architectural thesis which deals with programming, site analysis, schematic design, design development and detail systems design of a major project to aid in the transition to professional practice and to support a comprehensive synthesis of previous experiences emphasizing strengths and recognizing weaknesses. The thesis is a coalescence of previous education, training, and experience.
Student Objectives

The architectural profession is continually going through changes. To make sure that my education is also changing to meet with the demands that the profession and society are placing on the architects of the future, I have decided to work in a group of three thesis students. By working with other people and to effectively get ideas across not only to my professors but even more importantly, to my peers. This is the first time for the Ball State University College of Architecture and Planning that three thesis students have combined their efforts to write three volumes of a set. It took more organizational ability to organize the three volume set than to each have written our own separate thesises.

Society is becoming more and more specialized and people are having to devote their lives to more specific areas of their chosen professions. My personal objective is to become a manager in an architectural firm. To achieve this I have been studying business administration along with architecture, and have been involved both socially and professionally as administrator of different groups. I felt by working in this team that I would learn still more about what it takes to coordinate people and ideas.
Clubhouse Background

In the beginning of the 16th century, when "Kolf" was played in Holland, we have good reason to believe that this ancient game was devoid of most of its present day luxury and consequent complications. From the time that King James IV of Scotland sponsored this insidious game and conferred upon it the title of "royal", down to the present day, the requirements and exactitudes have gradually grown not only in regard to the method of playing but in respect to the proper housing of the players and their accessories.

The English and Scotch from 1471 to the present time, have succeeded in keeping the game with its accompanying clubhouses within reasonable limitations, but within four decades America has lifted it out of its original simplicity and made of it a highly specialized and scientific factor of our country life.

By the opening years of the twentieth century, clubs were scattered all over the country and their number continues from this time on to grow. The first clubhouses were usually remodeled farmhouses with inconveniences which today in the smallest of the newly created clubs would not be tolerated for a moment but were endured patiently for years; locker rooms were cramped and uncomfortable with insufficient shower accommodations and intolerable ventilation; lounges and dining rooms were badly furnished, poorly lighted and generally ill-equipped.
Clubhouse Description

One important purpose in the architecture is to produce a warm, comfortable, home-like atmosphere. If the average person unconsciously relaxes and feels at home in a club, if a sense of happiness and exhilaration keeps him there longer than has been his custom, its mission is fulfilled and its success is assured.

The sequence of rooms, their size, character and functioning must unconsciously serve the members with ease and convenience. Economy of steps, speed and every want immediately supplied at their command, must first be assured before their aesthetic natures can be appealed to.

The primary role of a country club is to provide an environment facilitating rest, relaxation, and an opportunity for contact with fellow golfers.

The clubhouse should be located in relatively quiet surroundings. At the same time it should be near the heart of the golf, swimming, and tennis area while still being easily accessible to its members.

Among the amenities enjoyed by country club members should be views of golfing activities and landscape vistas beyond.
PROGRAM

HARRISON WOOD
AN ENERGY EFFICIENT RESIDENTIAL AND RECREATIONAL COMMUNITY

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

DRG NO. 1
### Sizing

**ENTRY**

<table>
<thead>
<tr>
<th>Entry</th>
<th>Interior Space</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foyer</td>
<td>144 sq. ft.</td>
</tr>
<tr>
<td>Lobby</td>
<td>1152 sq. ft.</td>
</tr>
<tr>
<td>Restrooms</td>
<td>324 sq. ft.</td>
</tr>
<tr>
<td>Men</td>
<td>324 sq. ft.</td>
</tr>
<tr>
<td>Women</td>
<td>324 sq. ft.</td>
</tr>
<tr>
<td>Coat check/cashier</td>
<td>324 sq. ft.</td>
</tr>
<tr>
<td></td>
<td>2592 sq. ft.</td>
</tr>
</tbody>
</table>

**ADMINISTRATION**

<table>
<thead>
<tr>
<th>Entry</th>
<th>Interior Space</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receptionist/secretary/file storage</td>
<td>216 sq. ft.</td>
</tr>
<tr>
<td>Manager</td>
<td>144 sq. ft.</td>
</tr>
<tr>
<td>Auditor</td>
<td>144 sq. ft.</td>
</tr>
<tr>
<td></td>
<td>504 sq. ft.</td>
</tr>
</tbody>
</table>

**DINING FACILITIES**

<table>
<thead>
<tr>
<th>Entry</th>
<th>Interior Space</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formal (first level)</td>
<td>2880 sq. ft.</td>
</tr>
<tr>
<td>Private dining rooms</td>
<td></td>
</tr>
<tr>
<td>Stage</td>
<td>576 sq. ft.</td>
</tr>
<tr>
<td>Fashion shows</td>
<td>144 sq. ft.</td>
</tr>
<tr>
<td>Dressing room</td>
<td></td>
</tr>
<tr>
<td>Waiting area</td>
<td>288 sq. ft.</td>
</tr>
<tr>
<td>Service station</td>
<td>576 sq. ft.</td>
</tr>
<tr>
<td>Informal (2nd level)</td>
<td>2880 sq. ft.</td>
</tr>
<tr>
<td>Stage (dance floor)</td>
<td>576 sq. ft.</td>
</tr>
<tr>
<td>Sound room</td>
<td>144 sq. ft.</td>
</tr>
<tr>
<td>Waiting room</td>
<td>288 sq. ft.</td>
</tr>
<tr>
<td>Service stations</td>
<td>576 sq. ft.</td>
</tr>
<tr>
<td>Cocktail lounge</td>
<td>1440 sq. ft.</td>
</tr>
<tr>
<td></td>
<td>10,368 sq. ft.</td>
</tr>
</tbody>
</table>
KITCHEN FACILITIES

Receiving/loading 144 sq. ft.
Trash/garbage 144 sq. ft.
Freezer 72 sq. ft.
Refrigerator 72 sq. ft.
Dishwashing 144 sq. ft.
Dry food, storage 144 sq. ft.
Employee's lounge 432 sq. ft.

Dining
Check-in
Dressing
Lockers
Rest rooms

Men 72 sq. ft.
Women 72 sq. ft.

Chef office
Food Preparation

Cooking 250 sq. ft.
Meat preparation 100 sq. ft.
Vegetable preparation 150 sq. ft.
Cold food preparation 350 sq. ft.
2,362 sq. ft.

GOLF FACILITIES

Pro shop 1440 sq. ft.
Sales counter 288 sq. ft.
Pro shop 144 sq. ft.
Stock room 432 sq. ft.
Bag storage 576 sq. ft.

Golf carts

Storage 2880 sq. ft.
Repair 1440 sq. ft.

Bar & Grill 1152 sq. ft.
8352 sq. ft.
LOCKER ROOMS

Men

Lounge  864 sq. ft.
Sauna  144 sq. ft.
Steam bath  144 sq. ft.
Whirlpool  144 sq. ft.
Showers  288 sq. ft.
Toilets/sinks  288 sq. ft.
Lockers  2,592 sq. ft.

Women

Lounge  432 sq. ft.
Sauna  96 sq. ft.
Steam bath  96 sq. ft.
Whirlpool  96 sq. ft.
Showers  216 sq. ft.
Toilets/sinks  216 sq. ft.
Lockers  1,440 sq. ft.

Hand ball court  8,208 sq. ft.

MECHANICAL

3563 sq. ft.

CIRCULATION

3240 sq. ft.

TOTAL SQUARE FOOTAGE

40,000 sq. ft.
Toilets

The number of fixtures required in the toilet rooms normally will be dictated by local codes and ordinances. Generally accepted standards for the number of fixtures in the social end of the building are as follows:

<table>
<thead>
<tr>
<th># OF PERSONS SERVED</th>
<th># W.C.'S</th>
</tr>
</thead>
<tbody>
<tr>
<td>75 - 100</td>
<td>5</td>
</tr>
<tr>
<td>101 - 125</td>
<td>6</td>
</tr>
<tr>
<td>126 - 150</td>
<td>7</td>
</tr>
<tr>
<td>151 - 175</td>
<td>8</td>
</tr>
<tr>
<td>175 -</td>
<td>1 FOR EVERY 30 PEOPLE OVER 175</td>
</tr>
</tbody>
</table>

In men's toilet rooms, 66% of the water closets may be replaced by urinals. Lavatories should be supplied at the rate of one for every four water closets and/or urinals. A women's powder room in connection with toilet facilities is generally provided, although it is not absolutely necessary.¹
Administration

Club business offices are as important to club operation as the purchasing, payroll and scheduling operation is to any business. It requires the proper accommodations for bookkeeping, records, correspondence, communications and safe storage of valuable documents and money.

The manager's and auditor's offices should be behind the clerical office with respect to membership traffic to allow them maximum privacy from casual and time-consuming conversation with members. The business office should be close to the maintenance of the building so that salesmen and others having club business to transact will not have to wander through the club to find the manager or other office personnel.2
Dining

A golfer's greatest interest in his club, is his ability to obtain a well prepared meal whenever he desires, and a comfortable home-like and unpretentious atmosphere in this area will add greatly to his enjoyment of the club.

The restaurant phase of the clublife is always an uncertain quantity unlike all other elements of the club, such as entertainment, maintenance of locker room, equipment and operation, which are fairly certain propositions and can be adjusted as conditions require without much chance of loss as time goes on.

The first concern should be the general location of the dining room. It should be located adjacent to the kitchen, and at the same time the main entrance. Dining porches are very popular and are essential in summer time but should be arranged on one side of the dining room only. Plenty of outside air and light are absolutely essential, and of course a fine view from the dining room should be taken advantage of.

An enclosed area should be planned off the dining room, so that furniture may be moved there when the floor space is required for other purposes.
Cocktail Lounge

This is almost consistently the profit maker for any country club. The main cocktail lounge should be accessible directly from the main lounge and dining room for those who wish to enjoy a before luncheon or before dinner cocktail.
Kitchen

Country club kitchens are particularly difficult to plan because of the nature of the patronage at the club. Provision must be made for the servicing of operations of banquet proportions as well as those of moderate or minimum proportions. Since most club members expect something approaching classical cookery, the food facilities must be larger and more varied than what will be found in the usual restaurant.

A mistake often made in club kitchens is to purchase a dish-washing machine which will handle the peak soiled ware during the peak volumes. This is not necessary since a much smaller machine will do quite well if the club will purchase extra dishes, glasses, silver and other ware and operate the smaller machine over a longer period. A larger soiled dish counter and extra racks are also needed but with such an arrangement fewer total personnel are needed since the ware-washing personnel work steadily throughout their work day rather than in spurts.

The flow of food from receiving room to storage units to preparation section to serving area should be achieved with a minimum of steps and cross traffic.
One of the most important essentials of the kitchen in relation to the rooms it serves, is to have the service doors on one side of the kitchen only. A great deal of wasted motion can thus be saved. Double doors should be provided with an intervening vestibule between the kitchen and the dining room.\textsuperscript{2}
**Pro Shop**

The relation of the pro shop to the locker room is very important, and while it should under no conditions be a part of the locker room, it is equally bad to have it at any great distance away from either the first tee or the locker room. Care must be taken however, to have the pro shop entrance sufficiently out of view of the locker room, so that free intercourse with the professional by men, women and children does not interfere with the privacy of the locker room.

The pro shop will have four separate areas. One will be used for display of new materials, and adequately equipped with racks and show cases for the display and sale of merchandise. This room should be large enough for the unobstructed swinging of clubs.

The second room should contain racks for the storage of clubs. This room should be large enough to contain a sufficient number of standard compartments to provide for the storage of bags and clubs for about 80% of the active membership. Space should be allowed however, for the installation of additional racks to bring the number up to full membership. Customs differ in localities in regards to the percentage of members who leave their clubs in the professional's care, so that no set rule can be laid down in this regard.
The third room is the stock room for the storage of excess merchandise and has to be located adjacent to the sales counter for easy retrieval of goods.

The fourth room is the pro office for the pro's desk and account books, as a professional is often required to leave his work on short notice to give lessons or play.
Bar & Grill

The modern club grill is undoubtedly the survival of the old English inn or tavern. It is symbolic of an informal dining room provided with a spirit of freedom.

Next to the locker room, the grill is undoubtedly the most popular room in the clubhouse, as the informality of dress and speech permitted within its walls are most welcome in the relaxed moments after golf.

Theoretically, the heart of the grill room is the fireplace, and it should be large and inviting.

From an economical standpoint the grill room should be a valuable asset to the club; space required for chairs and tables can be less without discomfort; seating space may be some three or four square feet less per person than is required in the dining room. The type of furniture used can be less expensive and the service less elaborate. It is true that the average golfer expects prices to be on a slightly looser scale, and that he may order a mere snack with a clear conscience.

The grill should always adjoin the locker rooms and no other considerations should be permitted to interfere with this location. The ideal position, if possible, is between the dining room and the locker rooms.
Of all the rooms of the club, the grill may be the most independent in its style and treatment from the rest of the building without offending anyone artistically.

The floor treatment in any area where golfers will be walking with their spiked shoes should be covered with a tile, slate or stone surface.

The more unusual a treatment is with high and airy ceiling and soothing color, the more popular the place will prove. ²
Locker Rooms

The first requirement of a good locker room is undoubtedly and abundance of fresh air and light. Regardless of its size or cost, this can be and should be insisted upon, but strange to say its lack is one of the most common faults in many new club buildings. Light should be admitted from 4'6" above the floor clear to the ceiling, and overhead lighting by means of skylights is desirable in addition.

Keeping in mind the necessity of light and air, it is out of the question to place the locker room below ground or even partly so, and a room built into the hillside with one side dark is an obsolete idea.

The lockers range in size between 18" x 12" - 18" x 18" - 18" x 24" and 24" x 24" with 7 foot aisles between. All things considered, the straight aisles with lockers back to back has proven most satisfactory in the majority of cases. Benches should be 18" wide for knee space comfort.

The size, number and arrangement of shower and wash rooms are a most important adjunct to the locker room. From 8 to 12 showers are required for 300 lockers, depending upon the prevailing custom of play. Showers should contain at least 16 sq. ft. each.²
In situating the clubhouse building, the following factors should be taken into consideration: topography, solar and wind orientation, location with respect to main approaches, relationship to golf course, parking facilities, and service entrances.¹
SITE ANALYSIS
Topography

Normally, land which has a moderate variation in topography is considered desirable for golf course construction. The clubhouse should be set at the highest point on the site to achieve the best views and setting. Motorized golf cart use has been increasing. This mitigates the old problem of the older golfers having to negotiate steep grades to the clubhouse.²
Sun & Wind

There will be times when other factors of design will necessarily limit the degree to which sunlight and wind can be utilized, but they should be considered as valuable aids in heating, ventilating and creating a pleasant atmosphere in the clubhouse. Since sun and wind conditions vary from one part of the country to another and from season to season, a knowledge of local climatic conditions is essential to the proper evaluation of their use. In modern buildings, roof overhangs and other architectural sun shields can be used to good advantage to enhance the building design.^[2]
Golf Course

The first and tenth tees and the ninth and eighteenth greens should be closely related to the building exit from the gold facilities section. Tees, particularly, can be placed quite near the building without creating any particular problems. Greens, because of the danger of approaching golf balls, must necessarily be somewhat further from the building. Practice driving areas and putting greens should not create obstacles to natural approach patterns to or from the clubhouse.
Parking

Space for parking a number of cars equal to a minimum of 50% of the golf club membership should be provided. If the club is one which caters to outside parties and affairs or sponsors regular tournaments, this figure should be increased to a minimum of 75%. Additional space should be found inadequate at some time in the future. Parking facilities should be arranged to be convenient to both the social and golfing entrances.
Service Entrance

This should be located in an area of the building so as to keep it from view of the people outside coming in or inside looking out. Screen planting cannot do the job of hiding this view entirely, since foliage in most climates of the country is only available part of the time during the year. Brick or wood fences treated as design elements of the building are the most effective barriers in screening the service area where it might otherwise be exposed to view.²
BUILDING
TYPE
STUDY
B.T.S. Introduction

This research was done so that I might better have a handle on good and bad things that have been done in country club design. By studying other country clubs I learned what spaces needed to be included in a design and started to get a feeling for the size of these spaces.

By looking at other designs I could also start to sense a certain character or quality that a country club needs in order to have the aire of a country club.

The things that I have pointed out should help in designing these spaces.
Columbian Country Club
Dallas, Texas
Max Sandfield, Architect

Terraces, walls and other landscape media are employed to control traffic between the pool and main portion of building thus also controlling noise and views.¹
Midland Country Club
Midland, Texas
Charles Newhardt, Architect

This plan recognizes the necessity to zone the clubhouse into golf, social, service, and pool functions. With separate access to each of these facilities, interior and exterior circulation is properly controlled. Appreciation of the necessity to provide for teen-agers assures a successful family type operation. Exterior grade provides a terraced area to control circulation back to the clubhouse as well as to serve as a raised gallery for tournaments. The pro shop can be completely locked off from the rest of the clubhouse at night.
South Hills Country Club  
West Covina, California  
Richard H. Pledger, Architect

This one-floor scheme is functionally well organized.  
Separating golf and social areas and locating service facilities centrally. The service entrance is well screened from view and does not conflict with the golf and social entrances.  
Maximum advantage is taken of the view onto the course.  
Dining and lounge areas offer a flexible pattern for food service. The pro shop is located ideally for service and control of play. Caddying and club storage facilities are well situated at the golfer's exit to the course.¹
1 Foyer  
2 General office  
3 General office  
4 Lounge  
5 Bar  
6 Dining room  
7 Coats  
8 Storage  
9 Powder room  
10 Women's toilet  
11 Janitor's closet  
12 Men's toilet  
13 Women's locker room  
14 Men's locker room  
15 Kitchen  
16 Kitchen storage  
17 Grill room  
18 Bar  
19 Liquor service bar  
20 Liquor storage  
21 Golf professional's office  
22 Pro shop  
23 Cart storage  
24 Club storage  
25 Women's lounge  
26 Men's lounge  
27 Women's shower  
28 Men's shower  
29 Women's toilet  
30 Men's toilet  
31 Valet  
32 Men's toilet  
33 Valet  
34 Men's lounge  
35 Bar  
36 Janitor's closet

Note: Boiler and air conditioning equipment and bottle storage under 23, 24, 25, 26, 27 and 28.
Pool and pool facilities for future construction.

South Hills Country Club  
West Covina, California  
Richard H. Pledger, Architect  
Corona Del Mar, California
Oakwood Country Club
Dodson, Missouri
Kivett & Myers, Archts. & Engineers
Angus McCallum, Associated Archt.

General card room and card cubicles are unusual features of this plan. Provision of lockers and showers for boys and girls off the pool is highly recommended at most modern clubs.
Houston Country Club
Houston, Texas
Wilson, Morris & Crain, Archts. & Engs.

Ground floor golf facilities and main floor social facilities are
served by an intermediate level kitchen, ramping up one-half story
and down one-half story for service. Large oval ballroom and
dining room with orchestra stand make this room adaptable for
many functions. Teen club, swimming pool and wading pool in-
dicate that this club intends to be a family style country club
catering to the needs of all age groups.¹
Coral Ridge Country Club
Ft. Lauderdale, Florida
Charles McKirahan, Archt.

Variation on the conventional locker theme is this small items and valuables locker with clothes hanging space grouped for each bank of lockers. Sliding shelf provides convenient place for drinks and plastic covered seat sustain spills. Lack of exposed ducts and pipes, high ceiling, natural wood of lockers, all contribute to the pleasant atmosphere of this locker room.
Tucson Country Club  
Tucson, Arizona  
Place & Place, Architects  

Horizontal club storage system is more economical of space, but vertical system is handier and there is less wear and tear on the members equipment.

Vertical bag rack of welded black iron pipe requires virtually no maintenance and is indestructible under conditions of normal usage.
Oklahoma Golf & Country Club
Oklahoma City, Oklahoma
Hudgins, Thompson Ball & Assoc., Archts.

This efficient kitchen arrangement indicates the kind of detailed planning which must go into the design of kitchen areas in order to assure the lowest overhead costs. The easily maintained stainless steel equipment and quarry tile floor encourage good housekeeping and keep its cost within reason for the club. The metal acoustic ceiling lowers the noise level substantially and can also be easily washed. Adequate lighting reduces fatigue and hence keeps help happy and productive.
B.T.S. Conclusion

1. FORM - Most existing clubhouses for golf courses have a low, unobtrusive profile relating to the rolling hills around it.

2. VIEWS - Clubhouses are usually long and narrow rather than square. The reason for this is to have more frontage overlooking the golf course or lake.

3. ARRANGEMENT - Most clubhouses are arranged so that the parking is on the opposite side of the clubhouse from the golf course. This is done mainly so that the service side of the building does not interfere with the viewing side. The lounges, bars, and dining areas are on the viewing side. The locker rooms, kitchen, and service areas are on the service or parking side.

4. AXIS - There seemed to be no correlation as to which side the north or the south, as to where the parking or golf course were but they were always opposite of each other usually on a north-south axis rarely east west.
SCHEMATIC DESIGN
Shown here in diagrammatic form are three basic types of clubhouse schemes. They are intended to show functional organization only. Topography, space and budgetary limitations will dictate which scheme is the most feasible in any given case. There may be times when a combination of these types is indicated.

It should be apparent from these diagrams the close correlation necessary between the course and site design and the building design.
PRELIMINARY DESIGN

HARRISON WOOD
AN ENERGY EFFICIENT RESIDENTIAL AND RECREATIONAL COMMUNITY

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

NO. 5
DRG
FINAL DESIGN
POOL SECTIONS
Design Emphasis

Upon first entering the building a person will be able to see in which direction he should go in order to get wherever he wants, because all areas revolve around the entrance lobby, as do the community activities revolve around the country club.

Country clubs need to have an open, airy feeling. To achieve this I have used high ceilings combined with large expanses of glass. Exterior terraces and balconies also add to obtain this open airy feeling.

The building should not compete with nature but should resemble it. The building is on the crest of a gently sloping hill and is in a wooded area with small limestone outcroppings. To resemble this site the roof pitch is at the angle of the slope of the ground and the building will be built of wood and the fireplaces and patios will be built of limestone.

To achieve the feeling of the outside terrain inside, I have terraced the dining area at the slope of the land and have used column clusters to relate to the clusters of trees that cover the site.

Since the lake is at the foot of the hill so the pool should be at the foot of the country club.

To make the building seem like it is part of the land is the major design emphasis.
APPENDIX
Critics

ARCHITECTURAL CRITICS

Main studio & jury critic
College of Architecture/Planning
Ball State University
Muncie, Indiana 47306
Paul Laseau, AIA

Jury critic
College of Architecture/Planning
Ball State University
Muncie, Indiana 47306
Jack Wyman, AIA

Systems critic
College of Architecture/Planning
Ball State University
Muncie, Indiana 47306
Robert Koester, AIA

LANDSCAPE ARCHITECTURAL CRITICS

Studio & jury critic
College of Architecture/Planning
Ball State University
Muncie, Indiana 47306
Stan Geda, ASLA

Jury critic
College of Architecture/Planning
Ball State University
Muncie, Indiana 47306
Joseph Cascio, ASLA
Resources

DELAWARE COUNTRY CLUB
Muncie, Indiana

  Membership  550
  Dining capacity  330

ELKS COUNTRY CLUB
Muncie, Indiana

  Membership  1,506
  Dining capacity  318

AMVETS COUNTRY CLUB
Muncie, Indiana

  Membership  300
  Dining capacity  250

THE POINT/RECREATIONAL & RESIDENTIAL COMMUNITY
Bloomington, Indiana

  Membership  500
  Housing  1,500 Units
  Dining capacity  135
<table>
<thead>
<tr>
<th>Geographical Location</th>
<th>Date of Construction</th>
<th>Number Members</th>
<th>Area, sq. ft.</th>
<th>Total Cost, dollars</th>
<th>Cost per sq. ft., dollars</th>
<th>Sq. ft. per Member</th>
<th>Cost per Member, dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Membership over 500</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Southwest</td>
<td>1955-56</td>
<td>550</td>
<td>7,500</td>
<td>80,000**</td>
<td>14.67</td>
<td>2.00</td>
<td>1067</td>
</tr>
<tr>
<td>Southwest</td>
<td>1955</td>
<td>600</td>
<td>9,300</td>
<td>93,000**</td>
<td>14.67</td>
<td>3.00</td>
<td>3500</td>
</tr>
<tr>
<td>West</td>
<td>1954</td>
<td>745</td>
<td>14,430</td>
<td>165,000</td>
<td>11.40</td>
<td>11.40</td>
<td>1943</td>
</tr>
<tr>
<td>Southwest</td>
<td>1955</td>
<td>550</td>
<td>12,250</td>
<td>196,000</td>
<td>17.40</td>
<td>17.40</td>
<td>2350</td>
</tr>
<tr>
<td>Southwest</td>
<td>1955-56</td>
<td>650</td>
<td>11,500**</td>
<td>220,000**</td>
<td>19.00</td>
<td>19.00</td>
<td>3380</td>
</tr>
<tr>
<td>East</td>
<td>1954</td>
<td>700</td>
<td>—</td>
<td>300,000</td>
<td>—</td>
<td>—</td>
<td>4300</td>
</tr>
<tr>
<td>Southwest</td>
<td>1954</td>
<td>—</td>
<td>20,400</td>
<td>405,000</td>
<td>26.00</td>
<td>26.00</td>
<td>2900</td>
</tr>
<tr>
<td>West</td>
<td>1954</td>
<td>600</td>
<td>37,183</td>
<td>500,000**</td>
<td>13.45</td>
<td>13.45</td>
<td>8340</td>
</tr>
<tr>
<td>Southwest</td>
<td>1955</td>
<td>650</td>
<td>38,000</td>
<td>287,411</td>
<td>15.40</td>
<td>15.40</td>
<td>9000</td>
</tr>
<tr>
<td>West</td>
<td>1954</td>
<td>1,000</td>
<td>36,129</td>
<td>600,000</td>
<td>16.50</td>
<td>16.50</td>
<td>6000</td>
</tr>
<tr>
<td>Midwest</td>
<td>1950</td>
<td>529</td>
<td>—</td>
<td>742,000</td>
<td>—</td>
<td>—</td>
<td>1440</td>
</tr>
<tr>
<td>Southwest</td>
<td>1955</td>
<td>1,004</td>
<td>46,600</td>
<td>842,853</td>
<td>18.00</td>
<td>18.00</td>
<td>8430</td>
</tr>
<tr>
<td>Midwest</td>
<td>1955-56</td>
<td>555</td>
<td>48,227</td>
<td>939,436</td>
<td>19.49</td>
<td>19.49</td>
<td>1685</td>
</tr>
<tr>
<td>Southwest</td>
<td>1955</td>
<td>625</td>
<td>36,254</td>
<td>1,096,600**</td>
<td>30.00</td>
<td>30.00</td>
<td>1750</td>
</tr>
<tr>
<td>Southwest</td>
<td>1954</td>
<td>1,000</td>
<td>75,000</td>
<td>1,500,000**</td>
<td>20.00</td>
<td>20.00</td>
<td>1500</td>
</tr>
<tr>
<td><strong>Median</strong></td>
<td></td>
<td></td>
<td></td>
<td>36,129</td>
<td>500,000</td>
<td>41.35</td>
<td>5150</td>
</tr>
</tbody>
</table>

| **Membership 300-300** |                      |                |              |                   |                          |                  |                        |
| West                  | 1954                 | 350            | —            | 25,000            | —                        | —                | 7130                   |
| Southwest             | 1954                 | 400            | 6,630        | 40,000            | 10.99                    | 10.99            | 1800                   |
| Southwest             | 1954                 | 400            | 4,800        | 80,000            | 16.67                    | 16.67            | 2000                   |
| Southwest             | 1955                 | 500            | 10,300       | 113,152           | 11.00                    | 11.00            | 2260                   |
| Midwest               | 1954                 | 360            | —            | 142,500           | —                        | —                | 3940                   |
| Midwest               | 1953                 | 400            | 13,000       | 161,088           | 12.40                    | 12.40            | 4030                   |
| Southwest             | 1950                 | 475            | —            | 175,000           | —                        | —                | 3680                   |
| Midwest               | 1954                 | 400            | 17,819       | 164,150           | 10.34                    | 10.34            | 3840                   |
| Midwest               | 1954                 | 350            | —            | 200,000           | —                        | —                | 5700                   |
| West                  | 1955-56              | 400            | 17,500       | 212,780           | 12.15                    | 12.15            | 5300                   |
| Midwest               | 1955-56              | 500            | 18,000       | 250,000**         | 14.00                    | 14.00            | 5000                   |
| Midwest               | 1955-56              | 400            | —            | 250,000**         | —                        | —                | 6250                   |
| Midwest               | 1953                 | 300            | 22,000       | 300,000           | 13.33                    | 13.33            | 1000                   |
| Southwest             | 1945                 | 450            | 27,000       | 360,000           | 14.00                    | 14.00            | 8000                   |
| Southwest             | 1955-56              | 500            | —            | 400,000           | —                        | —                | 8000                   |
| East                  | 1954                 | 401            | —            | 525,000           | —                        | —                | 13100                  |
| Midwest               | 1954                 | 325            | 39,000       | 750,000           | 19.00                    | 19.00            | 2300                   |
| East                  | 1954                 | 500            | 39,027       | 750,000           | 19.23                    | 19.23            | 1200                   |
| **Median**            |                      |                | 17,819       | 206,380           | 37.0                     | 37.0             | 512.20                  |

| **Membership under 300** |                      |                |              |                   |                          |                  |                        |
| Southwest             | 1954                 | 200            | —            | 1,500             | —                        | —                | 7.50                   |
| Midwest               | 1954                 | 68             | 800**        | 1,600             | 2.00                     | 2.00             | 23.00                  |
| Midwest               | 1949                 | 78             | —            | 10,000            | —                        | —                | 128.00                 |
| Midwest               | 1954                 | 100            | 2,134        | 14,225            | 7.00                     | 7.00             | 142.25                 |
| Midwest               | 1953                 | 100            | —            | 18,000            | —                        | —                | 180.00                 |
| Midwest               | 1953                 | 140            | 2,400        | 20,524            | —                        | —                | 146.50                 |
| Midwest               | 1953                 | 215            | —            | 85,000            | —                        | —                | 395.00                 |
| Southwest             | 1955-56              | 200            | 11,800       | 200,000           | 16.94                    | 16.94            | 1000.00                |
| **Median**            |                      |                | 16,113       | 144.37            |                          |                  |                        |

*Insofar as is known, all figures are for building only and exclude furnishings, equipment, landscaping, pools and site improvements.
**Estimated.
***Serves 3500-member city club.
†First stage.
Table 7. Golf shop club storage and cleaning areas at one hundred seventy-three private golf and country clubs

<table>
<thead>
<tr>
<th>Size of membership</th>
<th>Actual club storage and cleaning area, average</th>
<th>Adequate* club storage and cleaning area, average</th>
<th>% adequate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. clubs reporting</td>
<td>Sq. ft</td>
<td>Sq. ft per member</td>
</tr>
<tr>
<td>Under 300</td>
<td>49</td>
<td>401</td>
<td>1.86</td>
</tr>
<tr>
<td>301-500</td>
<td>100</td>
<td>669</td>
<td>1.80</td>
</tr>
<tr>
<td>501 and over (average 648)</td>
<td>24</td>
<td>711</td>
<td>1.10</td>
</tr>
<tr>
<td>All groups</td>
<td>173</td>
<td>599</td>
<td>1.22</td>
</tr>
</tbody>
</table>

*Actual proven adequate layouts reported in this survey.

Table 9. Comparative analysis of key clubhouse areas in fourteen new private club buildings

<table>
<thead>
<tr>
<th>Geographic location</th>
<th>Member-ship</th>
<th>General lounge</th>
<th>Area</th>
<th>% of gross building</th>
<th>Dining rooms</th>
<th>Area</th>
<th>% of dining rooms</th>
<th>General storage</th>
<th>Pro shop</th>
<th>Bag and cart storage</th>
<th>Pro's office</th>
<th>Club offices quarters facilities</th>
<th>Mentor's age</th>
<th>Locker rooms</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Midwest</td>
<td>100</td>
<td>See dining</td>
<td>1000</td>
<td>47.0</td>
<td>88</td>
<td>8.8</td>
<td>n.i.c.</td>
<td>n.i.c.</td>
<td>n.i.c.</td>
<td>n.i.c.</td>
<td>n.i.c.</td>
<td>300</td>
<td>175</td>
<td>300</td>
<td>175</td>
<td>300</td>
</tr>
<tr>
<td>2 East</td>
<td>200</td>
<td>415</td>
<td>1550</td>
<td>22.6</td>
<td>464</td>
<td>30.5</td>
<td>n.i.c.</td>
<td>n.i.c.</td>
<td>n.i.c.</td>
<td>n.i.c.</td>
<td>n.i.c.</td>
<td>1100</td>
<td>200</td>
<td>1100</td>
<td>200</td>
<td>1100</td>
</tr>
<tr>
<td>3 Southwest</td>
<td>200</td>
<td>673</td>
<td>3200</td>
<td>27.0</td>
<td>1076</td>
<td>33.6</td>
<td>n.i.c.</td>
<td>n.i.c.</td>
<td>144</td>
<td>n.i.c.</td>
<td>n.i.c.</td>
<td>1100</td>
<td>810</td>
<td>1100</td>
<td>810</td>
<td>1100</td>
</tr>
<tr>
<td>4 West</td>
<td>745</td>
<td>370</td>
<td>2830</td>
<td>19.4</td>
<td>1011</td>
<td>35.4</td>
<td>536</td>
<td>745</td>
<td>856</td>
<td>49</td>
<td>169</td>
<td>1560</td>
<td>705</td>
<td>1560</td>
<td>705</td>
<td>1560</td>
</tr>
<tr>
<td>5 West (design)</td>
<td>400</td>
<td>1600*</td>
<td>4295</td>
<td>24.5</td>
<td>1435</td>
<td>33.2</td>
<td>600</td>
<td>505</td>
<td>823</td>
<td>70</td>
<td>196</td>
<td>1020</td>
<td>465</td>
<td>1020</td>
<td>465</td>
<td>1020</td>
</tr>
<tr>
<td>(actual)</td>
<td>600</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Southwest</td>
<td>480</td>
<td>1040**</td>
<td>4190</td>
<td>23.6</td>
<td>1545</td>
<td>36.9</td>
<td>125</td>
<td>654</td>
<td>720</td>
<td>In shop</td>
<td>200</td>
<td>n.i.c.</td>
<td>740</td>
<td>405</td>
<td>740</td>
<td>405</td>
</tr>
<tr>
<td>7 Southwest</td>
<td>3500</td>
<td>882</td>
<td>5436</td>
<td>26.6</td>
<td>1520</td>
<td>28.0</td>
<td>282</td>
<td>336</td>
<td>441</td>
<td>78</td>
<td>230</td>
<td>168</td>
<td>3400</td>
<td>425</td>
<td>3400</td>
<td>425</td>
</tr>
<tr>
<td>City Club</td>
<td>8 mic-north</td>
<td>300</td>
<td>580</td>
<td>22.8</td>
<td>2321***</td>
<td>46.0</td>
<td>1615</td>
<td>521</td>
<td>500</td>
<td>In shop</td>
<td>270</td>
<td>395</td>
<td>3547</td>
<td>1240</td>
<td>3547</td>
<td>1240</td>
</tr>
<tr>
<td>9 East</td>
<td>1000</td>
<td>1970</td>
<td>5175</td>
<td>31.6</td>
<td>3481***</td>
<td>30.4</td>
<td>1311</td>
<td>1625</td>
<td>2730</td>
<td>In shop</td>
<td>786</td>
<td>n.i.c.</td>
<td>1106</td>
<td>3895</td>
<td>1106</td>
<td>3895</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 Southwest</td>
<td>625</td>
<td>2840</td>
<td>10,076</td>
<td>27.6</td>
<td>3473</td>
<td>34.7</td>
<td>1150</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>674</td>
<td>506</td>
<td>1590</td>
<td>506</td>
<td>1590</td>
</tr>
<tr>
<td>11 Southwest</td>
<td>325</td>
<td>1530</td>
<td>6710</td>
<td>17.2</td>
<td>4095***</td>
<td>61.0</td>
<td>6019</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>366</td>
<td>679</td>
<td>1840</td>
<td>679</td>
<td>1840</td>
</tr>
<tr>
<td>12 East</td>
<td>500</td>
<td>1380</td>
<td>7450</td>
<td>19.1</td>
<td>4741</td>
<td>63.5</td>
<td>1593</td>
<td>665</td>
<td>800</td>
<td>In shop</td>
<td>561</td>
<td>1896</td>
<td>2810</td>
<td>2550</td>
<td>2810</td>
<td>2550</td>
</tr>
<tr>
<td>13 Southwest</td>
<td>650</td>
<td>1808</td>
<td>6677</td>
<td>17.6</td>
<td>2244</td>
<td>33.6</td>
<td>1322</td>
<td>925</td>
<td>1260</td>
<td>85</td>
<td>230</td>
<td>400</td>
<td>2700</td>
<td>2860</td>
<td>2700</td>
<td>2860</td>
</tr>
<tr>
<td>14 Southwest</td>
<td>1004</td>
<td>2100</td>
<td>9910</td>
<td>21.2</td>
<td>4483***</td>
<td>45.0</td>
<td>2026</td>
<td>820</td>
<td>865</td>
<td>144</td>
<td>983</td>
<td>n.i.c.</td>
<td>1035</td>
<td>5480</td>
<td>1035</td>
<td>5480</td>
</tr>
</tbody>
</table>

* Kitchen areas include all food storage, preparation, and receiving areas; kitchen help lockers and toilets excluded.
** Outdoor dining terraces.
* Space used for dining.
** Includes lounge area used for dining.
*** Includes service kitchens outside main kitchen.
n.a. Not available.
n.i.c. Not in clubhouse.
### Table 8. The average number of employees in private country clubs

<table>
<thead>
<tr>
<th></th>
<th>Under 300</th>
<th>300-450</th>
<th>Over 450</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>high</td>
<td>low</td>
<td>avg.</td>
</tr>
<tr>
<td>EAST</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kitchen</td>
<td>8</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Dining</td>
<td>15</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>Grill</td>
<td>5</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Bar</td>
<td>4</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Office</td>
<td>4</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Desk</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Maintenance</td>
<td>5</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Housekeeping</td>
<td>5</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Pro shop</td>
<td>9</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Grounds</td>
<td>10</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Pool</td>
<td>10</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>78</td>
<td>28</td>
<td>50</td>
</tr>
</tbody>
</table>

| MIDWEST  |           |        |          |         |        |          |         |        |          |
| Kitchen  | 14       | 5      | 8       | 13      | 5      | 9        | 32      | 4      | 12       |
| Dining   | 9        | 3      | 6       | 13      | 2      | 9        | 18      | 4      | 11       |
| Grill    | 4        | 2      | 3       | 4       | 1      | 3        | 5       | 3      | 4        |
| Bar      | 5        | 1      | 2       | 5       | 1      | 3        | 5       | 2      | 3        |
| Office   | 4        | 1      | 2       | 4       | 1      | 2        | 5       | 2      | 3        |
| Desk     | 1        | 1      | 1       | 2       | 1      | 1        | 2       | 1      | 1        |
| Maintenance | 3   | 1      | 2       | 3       | 1      | 2        | 7       | 1      | 2        |
| Housekeeping | 3 | 1      | 2       | 5       | 1      | 3        | 10      | 1      | 3        |
| Pro shop | 6        | 1      | 3       | 7       | 2      | 3        | 7       | 2      | 4        |
| Grounds  | 7        | 2      | 4       | 18      | 4      | 7        | 12      | 3      | 8        |
| Pool     | 5        | 3      | 4       | 6       | 2      | 3        | 11      | 2      | 5        |
| Total    | 61       | 21     | 37      | 84      | 22     | 46       | 115     | 26     | 57       |

| SOUTH    |           |        |          |         |        |          |         |        |          |
| Kitchen  | 9         | 4      | 7       | 6       | 4      | 5       | 18      | 4      | 10       |
| Dining   | 20        | 4      | 10      | 9       | 4      | 6       | 15      | 4      | 7        |
| Grill    | 3        | 2      | 3       | 5       | 1      | 3       | 6       | 1      | 3        |
| Bar      | 3        | 1      | 2       | 4       | 2      | 3       | 5       | 2      | 3        |
| Office   | 3        | 2      | 2       | 3       | 1      | 2       | 5       | 1      | 3        |
| Desk     | 3        | 2      | 2       | 2       | 2      | 3       | 2       | 2      | 2        |
| Maintenance | 2   | 2      | 3       | 3       | 1      | 2        | 3       | 1      | 2        |
| Housekeeping | 1  | 1      | 2       | 5       | 1      | 3        | 10      | 1      | 3        |
| Pro shop | 6        | 1      | 3       | 4       | 1      | 2       | 6       | 1      | 3        |
| Grounds  | 11       | 2      | 6       | 10      | 3      | 7        | 21      | 2      | 11       |
| Pool     | 7        | 2      | 4       | 3       | 1      | 2       | 8       | 1      | 4        |
| Total    | 68       | 23     | 42      | 52      | 21     | 36       | 95      | 18     | 51       |

| FAR WEST |           |        |          |         |        |          |         |        |          |
| Kitchen  | 6         | 4      | 5       | 10      | 4      | 6       | 28      | 5      | 19       |
| Dining   | 14        | 3      | 6       | 11      | 4      | 6       | 26      | 6      | 16       |
| Grill    | 2        | 1      | 2       | 4       | 1      | 3       | 6       | 1      | 3        |
| Bar      | 3        | 2      | 2       | 3       | 2      | 2       | 7       | 2      | 4        |
| Office   | 3        | 2      | 2       | 5       | 2      | 3       | 11      | 2      | 5        |
| Desk     | 1        | 1      | 1       | 2       | 2      | 2       | 4       | 4      | 4        |
| Maintenance | 4   | 2      | 3       | 3       | 1      | 2        | 6       | 1      | 3        |
| Housekeeping | 1  | 1      | 1       | 6       | 1      | 3        | 27      | 2      | 14       |
| Pro shop | 7        | 2      | 4       | 5       | 2      | 3       | 5       | 1      | 3        |
| Grounds  | 9        | 1      | 5       | 14      | 7      | 10       | 41      | 6      | 22       |
| Pool     | 7        | 2      | 4       | 5       | 2      | 4       | 6       | 1      | 3        |
| Total    | 57       | 21     | 35      | 68      | 28     | 44       | 174     | 34     | 106      |

### Establishing the clubhouse construction budget

In establishing a clubhouse budget there is a variety of items to include besides the cost of the building itself. The budget should include the following items:

#### Building

- **Structure**
- **Mechanical equipment**
  - Heating, ventilating and air conditioning system
  - Plumbing, sewage and sewage disposal system
  - Electrical and communication system
  - Fire protection sprinkler system

#### Site

- **Surveys and tests**
- **Roads and parking areas and their curbs**
- **Walks and terraces**
- **Landscaping**
- **Outdoor lighting**
- **Tennis courts and other games requiring special surfaces and equipment**
- **Bridges**
- **Signs**
- **Abnormal filling and grading**
- **Fences**

#### Swimming pool

- Pool, filtration and pumping equipment and piping
- Cabanas or bathhouse and locker facilities with wet toilets

#### Furnishings and equipment

- Furniture (interior and exterior) and non-fixed lighting
- Carpetsing
- Draperies
- Lockers
- Kitchen equipment
- Cooking equipment
- Preparation tables
- Ovens
- Serving units
- Dishwashing equipment
- Refrigerators and freezer
- Utensils
- Linen and table service
- Snack and liquor bars and portable bar(s)
- Office equipment
- Pro shop display fixtures and bag and cart storage racks
- Miscellaneous appurtenances: ash trays, pictures, TV

#### Fees

- Lawyer
- Architect
- Food service consultant (may be included in architect's contract as a reimbursable item)
- Building permits
- Golf course architect (if on consultant basis)
- Building extras (allow minimum 5% contingency)
Bibliography

1Harold J. Cliffer, AIA, Planning the Golf Clubhouse, Building Research and Development Corp., National Golf Foundation, Inc.

2Clifford C. Wendehack, AIA, Golf & Country Clubs, William Helbven Inc.


"Forceful bi-nuclear plan for the Jacaranda country club." Architectural Record. vol. 152, p. 119-122, October 1972, illus., plans.

"From melange to a new Mexican; a Long Beach country club." Interiors. vol. 122, p. 100-103, October 1973, illus., plan.

"Fujimi country clubhouse." Japan Architect. vol. 51, p. 21-38, April 1976, illus., plans, diags.


"Golf [a club-house]" Domus. no. 513, p. 36-37, August 1972, illus., plans.

"Hampden country club, Springfield, Mass." Domus. no. 550, p. 6-7, September 1975, illus., diag.


"Itsukaichi country club." Japan Architect. vol. 48, p. 60-64, December 1973, illus., plans, diags.


"Japan ace golf clubhouse." Japan Architect. vol. 47, p. 27-36, December 1972, illus., plans, diag.


"Martorell, Bohigas, Mackay: un club de golf." Architecture d'Aujourd'hui. no. 177, p. 89, January 1975, illus., plans.


"Tennis club in Dublin."  Baumeister.  vol. 71, p. 652-654, June 1974, illus., plans.

"Tennis club project with underground courts."  Interiors.  vol. 130, p. 150-151, November 1970, illus., por., plan.

"Tennis pavilion, Woodhill country club, Wayzata, Minn."  Architectural Record.  vol. 158, p. 132, November 1975, illus., plans.


Source: Art Index through January 1977 under "Clubs (Architecture)"; Avery Index, 2d edition, 1st supplement, under "Clubhouses"

5/77