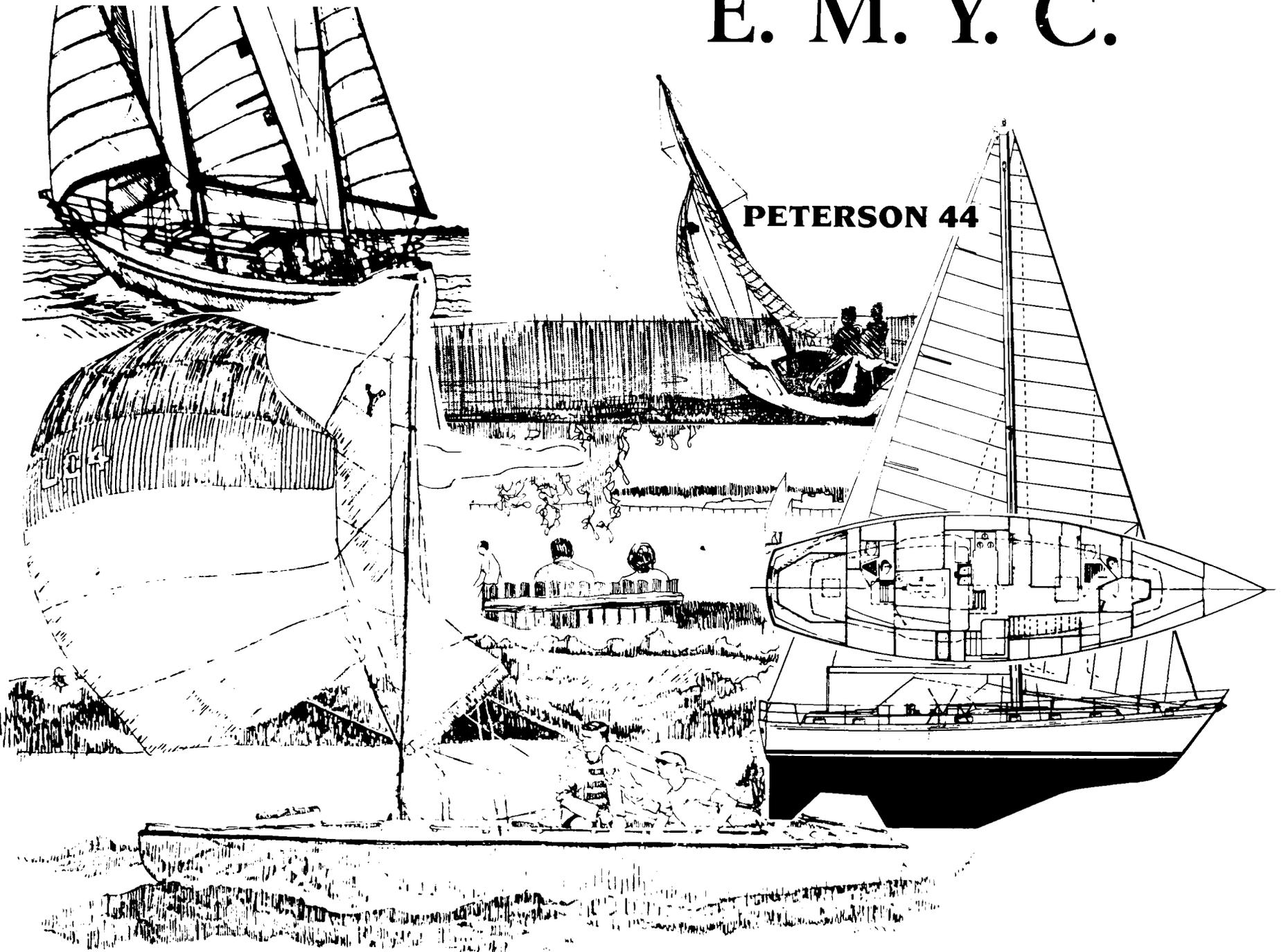


# E. M. Y. C.

**PETERSON 44**



Eagle Mountain  
Yacht Club  
Fort Worth, Texas

Presented to  
Dean Lawrence Garvin  
DIVISION OF ARCHITECTURE  
TEXAS TECH UNIVERSITY

In Partial Fulfillment  
of the Bachelor of Architecture  
Degree

by  
Jeffrey S. Forrest  
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DEDICATION:

To:

-My Parents, without who's neverending moral and  
financial support none of this could have happened .

-My friends, for helping me out when times got bad

-Myself, because I am getting it done!!

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# INTRODUCTION



## INTRODUCTION

Sailing is enjoying great popularity in the Fort Worth Metroplex area. Boats are so numerous on the area lakes that adequate storage is in short supply. Owners of storage facilities ask for and receive practically any amount they wish for the use of their limited commodity. Hence, a continuous demand exists for storage facilities of any kind. The facility designed as a result of this program should provide storage facilities in optimum quality and quantity as well as a "club" facility of quality commensurate with the storage provisions.

# BACKGROUND



## BACKGROUND

As a result of modern technology today's working men and women are faced with an ever increasing amount of "free" time.

"The working week has dropped from an estimated 70 hour, six-day week in 1850 to the present norm of a 40 hour, five-day week with strong movements in the direction of a 35 hour, four-day week..."<sup>1</sup>

### Recreation and Leisure Defined

Recreation and Leisure have become more than activities which happen in one's spare time or when one is not working. The actual socio/psychological aspects of this new million dollar industry will be discussed in greater detail in the Activity Analysis section. For the moment let it suffice that these periods of repose should be considered separate from their work

counterparts. One must also understand that recreation and leisure are not synonymous, but in fact, variations. Websters Dictionary defines recreation as "to create anew,... refreshment of strength and spirits after work."<sup>2</sup> and leisure is defined as "freedom provided by the cessation of activities; time free from work or duties"<sup>3</sup> thus, recreation can be implied to mean activity that takes place when leisure, or the absence of work exists. Leisure implies a more intellectual and passive fulfillment, whereas recreation carries more active, action oriented implications. While not synonymous, recreation and leisure are interdependent, and when providing for one, one must also consider the requirements of the other.

## Recreation Needs Researched

The need for recreation has been recognized in all branches of society. From industrial companies who build extensive recreational facilities for the use of their employees in an effort to bolster employee relations, to the Congress of the United States, who by public law 85-470 established the Outdoor Recreation Resources Commission (O.R.R.R.C.). Their task was to survey existing recreational facilities, trends and use patterns and to make recommendations as to the activities which will experience the largest rise in popularity and the facilities which will require the most development to meet the rising demand. The O.R.R.R.C. made their report to the President and Congress in January of 1962. The introduction of the

National Outdoor Recreation Policy states:

"It shall be the National Policy, through the conservation and wise use of resources, to preserve, develop, and make accessible to all American people such quantity and quality of outdoor recreation as will be necessary and desirable for individual enjoyment and to assure the physical, cultural, and spiritual benefits of outdoor recreation"<sup>4</sup>

Summarizing from the report of the O.R.R.R.C., certain factors can be singled out:

1. Demand for outdoor recreation is surging. The population of the United States should double by the year 2000, and the demand for recreation triple (1962 figures).
2. Demand is spread over the entire U.S. concentrating in areas of highest population density.
3. Recreation must be made

available to the people where they are in close proximity to their homes.

4. Most activity takes place on weekends and after work.
5. Simple activities or ones which require the least amount of specialized equipment and training are the most popular.
6. More specialized sports, while ranking low in popularity, rank high in personal intensity.

This initial report set an example which many states have followed, Texas being no exception. A similar study was conducted in Texas and a documentation of the findings, "The Texas Outdoor Recreation Plan" was published.

#### Water Oriented Recreation

The O.R.R.R.C. report states

"most people seeking outdoor recreation want water-to sit by, to swim

and to fish in, to ski across, to dive under, and to run their boats over"<sup>5</sup>

This is paralleled in the Texas Report where it states..

"...43 percent of the total recreation participation that occurred in Texas in 1968 was related to some type of water resource"<sup>6</sup>

The increase in popularity expected in outdoor recreation will require an increase in both water acreage and support facilities such as boat ramps, docking facilities etc. (for actual figures see Texas Outdoor Recreation Plan Vol. 1)

The focal point of this program document, the Fort Worth area, coincides with trends projected for the state and the nation as a whole.

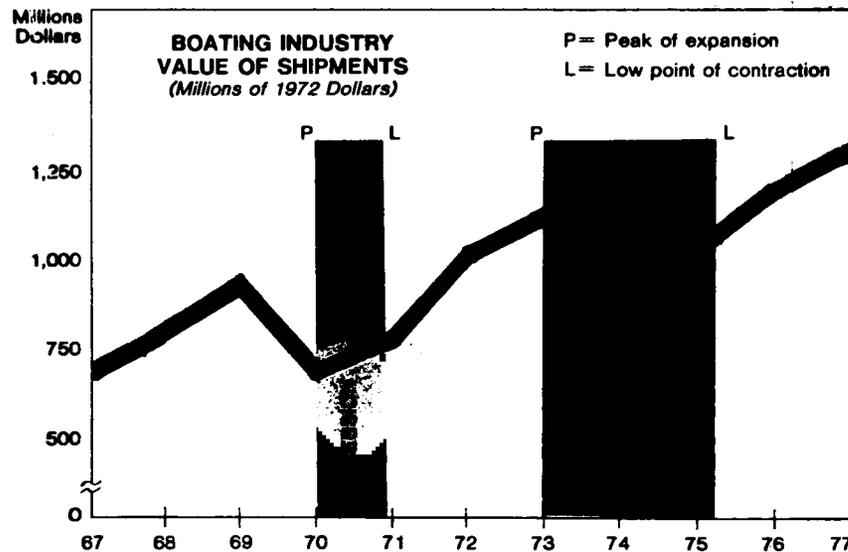
"Participation taking place in the urban and

rural areas of region 10 is expected to show significant increases from 40.9 million active days in 1968-1970 to 81.2 million days in 1980 and increase of approximately 99 percent."<sup>7</sup>

(Region 10 consist entirely of Tarrant County, including the Fort Worth Metroplex.) Of course, overall population will increase at an equal or greater rate, thus intensifying the need for increased recreational facilities.

As a result of the increased popularity of water related activities, ie., canoeing, rowing, sailing, power boating, hydro-planning, water skiing and cruising, The boating industry experienced a record year in 1981. As can be seen in figure.1.

Figure 1



The boating industry can boast an overall increase in sales over the years 1967-1977.

As the boating industry as a whole enjoys increased popularity the popularity of sailing is expected to escalate. In 1982 sailboats are expected to

"account for one-fifth of the market"<sup>8</sup>

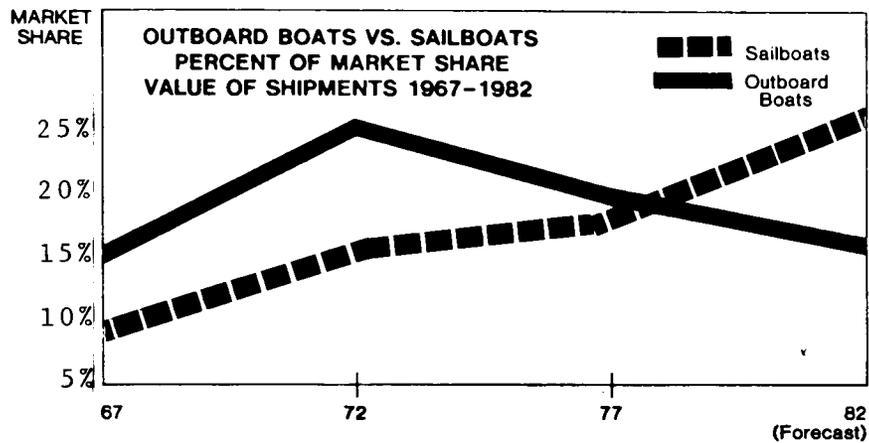


Figure 2

There are many factors that might contribute to this rise in popularity. Two of the strongest, most prevalent aspects are:

- 1) The strong comradeship that exists among sailing enthusiasts and
- 2) The basic enjoyment that arises from mastering nature's elements. (wind, waves, rocks, etc.)

The comradeship referred to, involves different age groups. For the older sailors it is a type of comradeship based on

reminiscence. Perhaps recalling the glory of younger years. To the middle-aged, it is one of class affiliation. To the younger sailors it is one of friendly competition, and the bond that grows out of being different in some small way from the mainstream of society. Attempts to further describe this comradeship are to be found in the Activity Analysis chapter.

Yachting exists in a variety of scales. Pleasure sailing in fifty foot yachts, intercollegiate and olympic racing in nineteen foot dinghies, children sailing seven foot board boats, and the newest fad in sailing, windsurfing.

#### General Site Survey

In the Fort Worth area there are five sailable lakes; Eagle Mountain

Lake, Lake Worth, Benbrook Lake, Lake Arlington, and Grapevine Lake. Of these five, Eagle Mountain Lake is considered by the sailing public to be the best suited to sailing. The others being eliminated for reasons of size, pollution, overcrowdedness, and degree of separation from the downtown area. Eagle Mountain Lake is located on the Northwest side of Fort Worth, approximately thirty minutes from the downtown area. The area around the lake is relatively undeveloped, rural countryside. Individual homes line the shores, and residential developments are scattered throughout the surrounding countryside. A more complete analysis of the site and its demographic surroundings can be found in the Site Analysis chapter.

The lake's temporal separation from the downtown area is advantageous rather than detrimental as one might expect. The travel time serves to psychologically separate the individual from the strife and competition of the work place and yet is not long enough so as to make the trip arduous and tiring one. Many Fort Worth businessmen who live in the vicinity of Eagle Mountain Lake enjoy taking advantage of the relaxing drive home and the tranquilizing effect of spending a number of afternoons each week on their boats. This would scarcely be possible if one had to trailer one's boat to the water, step the mast and adjust the rigging every time the boat is to be used. Putting one of these larger boats in the water is not as easy as it might be with the average motorboat. Some boats require the

better part of a day to set up and some are so heavy that a crane is needed to place them in the water. The weight and width of such boats makes towing them to and from the lake with the family car impractical, so most owners choose to store their boats at the launch site. Types of boat handling equipment are presented for general reference in appendix B.

Currently there exist on Eagle Mountain Lake three yacht clubs and marinas of significant size. These are all located in the general vicinity of the south east sector of the lake and are grouped relatively close together.

(Reference Figure 3)

Of these three, two are considered "Yacht Clubs" and one a "Marina". The combined berthing capacity of the three

is approximately nine hundred slips, being divided evenly among covered and uncovered slips. Currently, there exists no facility wholly devoted to the sailing public and their special needs. (The needs of sailing and power boating enthusiasts being quite different and often at odds.)

#### Boat Storage Types

There are many types of storage in use today. Dry storage on trailers and slip storage are two of the most popular. Dry storage is usually for accommodating small sailboats and motorboats, whereas the larger boats usually require slip storage. However, it is important to note that covered slip storage for power boats is increasing in popularity. All boats withstand storage better if they are in the water because of the con-

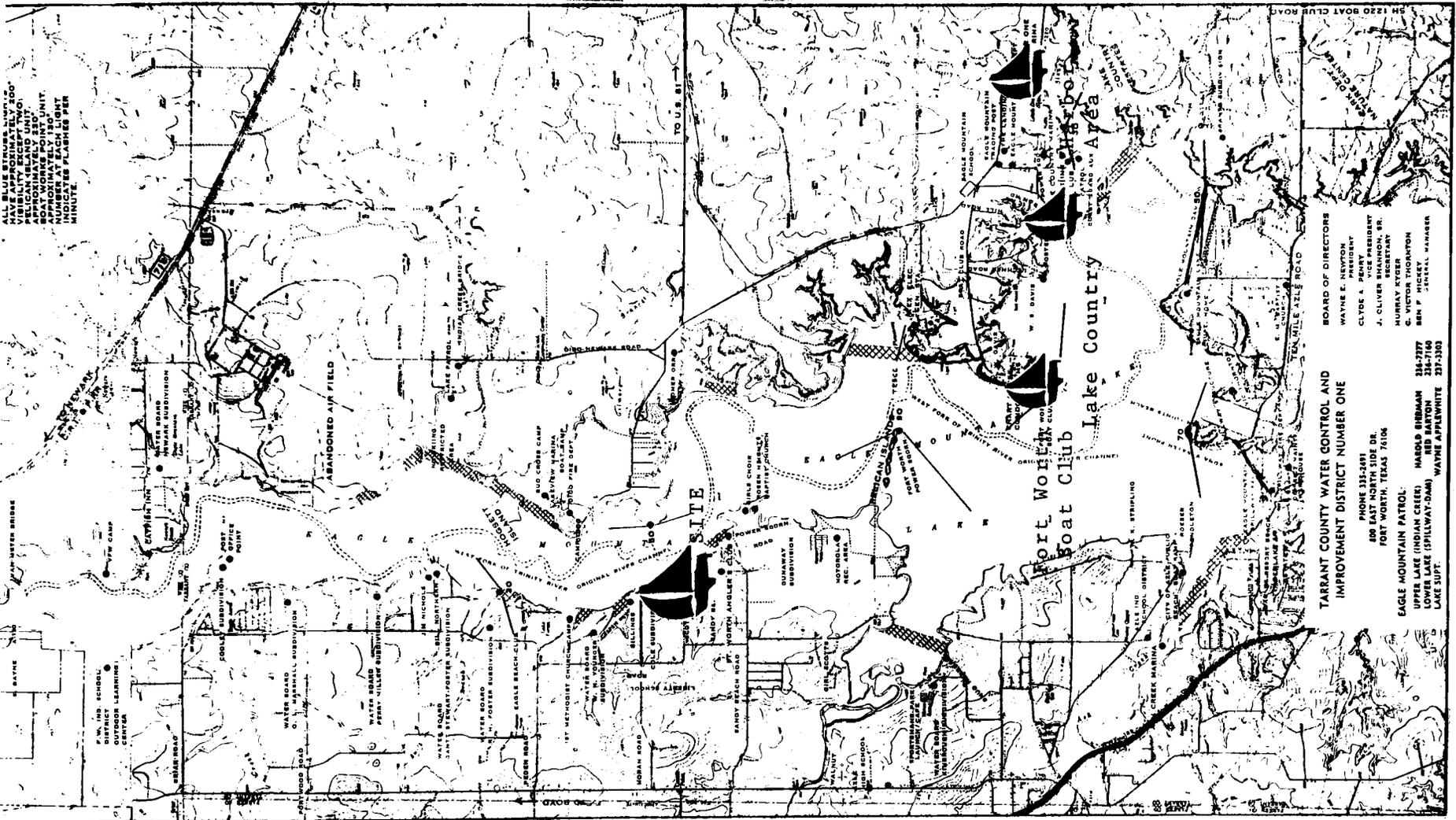


Figure 3: Map showing location of site and existing Yacht Club/Marina

tinuous support the water affords the hull,  
 much the same as the waterbed supports  
 the body.

Due to the increased interest in sailing, lakeside storage facilities are in short supply. "The situation usually adopted is the creation of artificial Yacht Harbors, or Marinas..."<sup>9</sup>

#### Marina/Yacht Club Defined

At this point it is necessary to define the two terms Marina, and Yacht Club, giving special attention to their similarities and differences. In his book The Complete Book of Boating, Earnest A. Zadig describes a Marina as:

"A sort of nautical garage.. A service establishment.. to be judged on the basis of the diversity and efficiency of the services it renders."<sup>10</sup>

and A Yacht Club as:

"The ultimate answer to the problems of berthing and storage."<sup>11</sup>

A situation in which "many owners value the social aspects of a yacht club more than the utilitarian"<sup>12</sup> thus, it can be said that with respect to cultural values a yacht club is similar to a country club. The major difference being emphasis on sailing, not golf.<sup>13</sup>

#### Country Club Popularity

Country Clubs serve a definite purpose in today's society. They provide opportunity for fulfillment of the basic human need for companionship. The accompanying golf course offers a green open space for the enjoyment of friendly competition.

#### Site Location

As a result of the location of

existing facilities and planning restrictions imposed by local authorities (see Site Analysis section) the site chosen for this proposed new Yacht Club is an existing fishing camp known as Scotty's Camp. Although Scotty's Camp is currently being operated as a sort of bait and tackle shop it also operates roughly a dozen boat slips. Therefore, it is obvious that the harbor area is suitable for limited sailboat traffic.

#### Economic Analysis

Plans have recently been announced to convert the Sandy Beach area to the south into a single family housing development. (see Appendix A) This new housing development could provide the nucleus for a strong economic base for a new Yacht Club. The marketing package of yacht club and luxury housing has proven

effective in the metroplex area as well as on Eagle Mountain Lake. The award winning Chandlers Landing development in Dallas as well as Lake Country Estates on Eagle Mountain Lake are two examples of such successful ventures. "Recreation has become an essential part of the packaging through which housing is offered to the well-to-do."<sup>14</sup> By taking advantage of this concept and developing housing around the planned Yacht Club, which serves as the focal selling point, a solid economic base can be established upon which to build such a yacht club.

It was as a result of these existing conditions that the client, Mr. Ronald Cagle became interested in such a speculative venture. As an investor and real estate broker in the metroplex area, Mr. Cagle is well versed in the entrepre-

neurial aspects of such a project and as such will advise on key points as might create a pleasant club and successful economic venture.

#### Housing Considerations

As previously stated, the Yacht Club is to serve as the nucleus and key selling point of a new housing development. As such it is evident that from an aesthetic viewpoint it is essential that any housing in the immediate vicinity of the Yacht Club compliment and reinforce the image portrayed by the club house area. Therefore, a portion of this program and the subsequent design shall be concerned with the preliminary stages of this housing development.

FOOTNOTES: INTRODUCTION/BACKGROUND

1. Rhona Rapoport and Robert N. Rapoport, Leisure and The Family Life Cycle, (London: Routledge and Kegan Paul, 1975), pg. 1.
2. Webster's New Collegiate Dictionary; (Springfield, Massachusetts: G & C Merriam Co., 1977) pg. 966.
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6. Texas Outdoor Recreation Plan, Texas Parks and Wildlife Department, Comprehensive Planning Branch, Austin, 1975, Vol. I, pg. 37.
7. IBID., vol. 2, pg.21
8. Thomas Conoscenti, "Economic Overview" Boating Industry; Vol. 44, No. 9, Sept. 1981, pg. 81.
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11. IBID., pg. 536.
12. IBID., pg. 536.
13. Jim Gahl, Fort Worth Boat Club, unpublished thesis, pg. 2.
14. Richard Kraus, Recreation and Leisure in Modern Society; (New York, Appleton-Century-Crafts; 1971), pg. 296.

FIGURES: INTRODUCTION/BACKGROUND

Figure 1. Boating Industry, Vol. 44, No. 9 September, 1981, pg. 81.

Figure 2. IBID., pg. 81.

Figure 3. Tarrant County Water Control and Improvement District #1, Fort  
Fort Worth, Texas.

# GOALS / OBJECTIVES



## GOALS AND OBJECTIVES

### Goals

The basic goals of the designer in consideration of the solution to this program are:

Design a recreational facility which will recognize the personal needs and aspirations of the individual member and family unit and reinforce the values and expectations of each

Provide for involve of a wide spectrum of patrons. Excluding no one through overindulgence of another

Provide for safe involvement of all ages of family members

Promote club status and popularity of the sport of sailing through dynamic design solutions

### Objectives

The objectives of the designer in attempting  
attempting to achieve the afore-mentioned goals are:

Development of harbor facilities, club facilities and immediate high density housing into a coherent whole through the use of similar materials, fenestra-

tion etc.

Design harbor facilities (boat docks etc,) in such a way as to maximize use of available harbor space

Phase construction to allow for incremental expansion as club membership grows

Make optimum use of existing site conditions such as existing vegetation, topography, vistas, etc. to enhance the design solution

Plan the harbor area and club area as a unit. Use landscaping etc. to create a sense of place along the shoreline and club grounds

# ACTIVITY ANALYSIS



## ACTIVITY ANALYSIS

### Client Identification

The first and perhaps most important task in the Activity Analysis of such a project as this is that of identifying and analyzing the clientele. The target group of Yacht Club Membership Committees seems to be families in the twenty-five to fifty-five age bracket. Rhona Rapoport and Robert N. Rapoport deal extensively with this age group in chapter four of their book Leisure and the Family Life Cycle, entitled "The Establishment Phase".

### The Establishment Phase

"The central preoccupation of people is with making commitments that constitute satisfying life investments".<sup>1</sup> These are investments of the type that affect future satisfactions and life style possibilities.

The decisions and personal time investments made during early years set the stage for later opportunities. The Rapoport's further divide this phase into three sub-phases according to children's age and progress in school. (Note: not all couples have children, nor do all couples begin their families at the same age, but the same problems and aspirations occur in all with some degree of regularity) These three "subphases" are labeled as Early Establishment, Mid-Establishment, and Late Establishment. These three along with their corresponding characteristic preoccupations and potential problems are illustrated in Figure 1.

Figure 1

Sub-phase	Preoccupation	Potential problems
Early establishment (pre-school children)	Concern with <i>productivity</i> : choices and plans	Conflicts in the allocation of one's energies
Mid-establishment (children at school)	Concern with <i>performance</i> : effectiveness; competence at what is chosen	Conflicts of loyalties and obligations; dissatisfaction
Late establishment (children out of school)	Concern with <i>evaluation</i> : the meaningfulness of commitments (psychological 'pay-off')	Depression; boredom; feelings of entrapment, isolation: whether to change? What? How?

As one can see, the three phases also correspond with the cycles of work and goal achievement. 1) Working and striving for a desired something, be it possessions, work status, etc. 2) Concern with the quality of experience the acquisition or goal achievement affords and 3) Evaluation of one's accomplishments, successes, and/or failures, assessing one's life and preparing for the retirement years. It is of utmost importance that the designer of any

family related facility do his utmost to attend to the critical needs of each phase of adult life. Therefore, a brief summary of the major characteristics of each group follows along with some possible key points that might assist the designer in his work.

#### Early Establishment Phase

As stated earlier, the major preoccupation of the Early Establishment Phase is obsession with productivity, whether it be work, homemaking, marital relationships, or child rearing. The actual field or fields of productivity are not as important as the mere act of being productive. This drive towards productivity extends into the social/com-munital areas where the man and woman become involved in as many activities as possible, both together and as

individuals.

Most married couples have children during these early years, raising the children and establishing a home become the focus of much attention. As soon as the children are born, or the house is acquired most of the couples' time, energy, and available money are channeled into these two primary interests.

The man's major concern outside of the home is his work. Establishing himself in a gratifying job or beginning on his career are paramount. The woman centers her interest in the home, or more recently, on establishing herself in the job market as well.

The couples in this phase have been found to have fewer stress related physical problems. The men are

"...still full of hope and prospects for their work

and careers: They are vigorous and perhaps retain many of the pleasures of their earlier associations and enjoyment of activities. Their wives are for the most part in the "honeymoon" role of the maternal and domestic role cycles and perhaps deriving maximum gratification from having and looking after small infants"<sup>2</sup>

For this group perhaps the greatest service a Yacht Club could provide would be opportunities for the entire young family to enjoy themselves as a unit in activities such as picnicing, or anything where all the family members can enjoy themselves and be together. The club might also provide opportunities for the young business man to entertain business associates, thereby assisting him in his climb up the ladder.

### Mid-Establishment Phase

In the Mid-Establishment Phase the goals and objectives striven for in the early phase have hopefully been accomplished. A plateau has been established whereby the man is secure in his job position and comfortable with his performance as a father. Likewise, the woman knows what kind of mother she is and may also be established in her own career.

There is an increase in family centered activities. Individual activities such as all male club memberships recede in favor of such home centered activities as gardening, family trips, excursions, and holidays. There is a great push to enjoy life now. The family is established economically and can afford to do more of the things they might have wanted to do in the early phase. The parents may adopt

an attitude of "do it now while we still have the time and are together as a family." Again, the purpose of the club is to involve the whole family. The club should be a family activity center with something to interest every member. Activities of the younger children need to be sufficiently supervised so as to free parents from the burden of worrying about their children's welfare.

### Late Establishment Phase

The late establishment phase is marked by the children leaving school and/or the home. Once again the couple are alone and faced with the task of getting to know one-another again. New interests need to be developed, interests in which both spouses can participate.

There is a need for both partners to get a moderate amount of exercise.

In order to satisfy this need many couples take up golf or walking. Most of the activities of this age group take on this relaxed air. This is mainly due to a general decline in physical attributes which normally accompany age.

The Late-Establishment Phase is a time of psychological pay-off. Evaluating one's life and accomplishments, coming to an understanding with oneself that life has been a success. Retirement plans are also formulated now based on the results of earlier life investments.

#### Summary-Establishment Phase

Admittedly, the pictures painted by these generalities are of ideal situations. Variations can come in many forms, region, social class, sex, personal orientation and opportunity, and family structure. However, the goal of a

leisure facility such as a yacht club is to assist families in achieving the optimum style of life. The Yacht Club should be a facility for the entire family, providing activities for the family as a whole or individually. A family atmosphere should pervaid.

#### Class Affiliation and Yacht Club Membership

"The only excuse for watching a sailing race is to be aboard somebody's palatial yacht with plenty of caviar sandwiches at one hand and tall glasses, ice, soda, and whiskey at the other, and nothing better to do... The only American Snob bigger than the Tennis Snob is the Yachting Snob".<sup>3</sup>

This statement, made by sportswriter Paul Gallico in 1938, while no longer necessarily true, is significant in that it summarizes the feelings of many

yacht club members that sailing and activities associated with sailing are connotative of the "Good Life". Yacht Club activities, correspondingly are characteristically relaxed with the exception of the regatta or race which is quite strenuous.

The concept of associating leisure activities with upper class affiliations is in no way new.

"The view of leisure as closely related to social structure stemmed from the writings of Thorstein Veblen, a leading American sociologist of the nineteenth century. Veblen showed how, through the various periods of history ruling classes emerged which identified themselves most sharply through the possession of leisure".<sup>4</sup>

There are obvious economic reasons why the sailing public tend to belong to the white-collar, managerial, professional

strata of society. The equipment required to maintain a boat of any size as well as the purchase price of most boats can be formidable.

Business can also be a motive for acquiring Yacht Club membership.

"The advertising man's high involvement in golf, swimming, boating, and tennis may well be linked to the need to do business on the green of in the clubhouse".<sup>5</sup>

In summary it can be said that many of the clientele of a Yacht Club, no matter what phase of life they may be in or what their ages may be, belong to, or aspire to belong to the upper strata of society. As such, the clientele can be expected to possess a higher degree of cultural taste, and demand that their club facilities reflect and enhance this point. However, not all Yacht Club

Members are comfortable with the rather stiff atmosphere which has traditionally been associated with membership. This group generally consists of younger people, age twenty-two to thirty, who express a desire for a more relaxed, "fun" atmosphere. This is the club's future membership body. In order to ensure the continued interest of these people, the designer must be careful not to suffocate this new life with the "stiffness" they find so oppressive. Balance and coexistence of the two types of club members is the key.

#### ACTIVITY ANALYSIS-SPECIFIC

The following activities are those which are considered of primary nature in the functioning of any Yacht Club.

#### Dining

Of all the facilities provided by the Yacht Club, those for the execution of the dining and drinking activities are of greatest importance. The success or failure of the club is directly related to the successful design of these spaces. In the competition among Clubs for membership, the first lines of battle are the dining and drinking accommodations.

Food service is varied, most meals are served ala carte or menu style. Occasionally buffet style service is required. The main difference between these types of food service is patron turnover. More people can be accommodated in the buffet style meal because waiting time is reduced. Greater aisle clearances are required for this higher amount

of traffic.

Dependant upon the event and the type of meal being served, participancy in the dining activities will vary. Miximum participation will occur at the evening meal, specifically on special family emphasis nights. Min- imun occupancy occurs during the week- day lunch period when most members are at work.

In order to effectively and ef- ficiently serve this wide range of par- ticipation levels, the spaces designed for dining must be flexible. However, flexibility must not be achieved at the expense of spatial character. The space must provide a warm and inviting atmosphere, conducive to the establish- ment of new friendships and the enjoy- ment of existing ones.

Table groupings and placement are the easist method of accommodating the wide variety of possibilities existant in the dining activity. It is suggested that tables seating groups from two to eight people be used. With most emphasis being placed on tables for two which can easily be combined to form groups of any size.

In some instances the number of diners will exceed the normal expected capacity of the dining facilities. For these instances it is recommended that overflow areas be provided. These can take the form of balconies, terraces, patios etc. This overflow condition occurs very rarely, hence, the overflow spaces should also be valid and functional in themselves.

Further flexibility can be

achieved by providing multiple dining facilities. In addition to the main dining area provision needs to be made for smaller, more intimate groups who desire a great deal of privacy when engaged in their specific activities. Privacy is of utmost importance to these smaller groups.

Another type of dining activity exists in the club which highly contrasts with the formal dining heretofore mentioned. This other type of dining is a great deal more relaxed. Clothing and food service are prime indicators of this relaxed atmosphere. Shorts, and other athletic wear are more likely to be worn by participants in this dining activity. Hamburgers, hotdogs, and sandwiches are the common menu items. The atmosphere of

this area is more "energized" and "action oriented" than the relaxed, sophisticated atmosphere of the more formal dining areas.

### Drinking

Drinking takes place throughout, and in conjunction with, the dining activities. However, participants in drinking activities require an area where they may indulge freely without fear of scrutiny by others.

An intimate scale should pervade this private drinking area. This is the space where the young club member will entertain his business guests and as such should contain the spatial quality apparent in the dining facilities.

Frequently, members will arrive at the club early enough to allow themselves time for a drink or two before dinner.

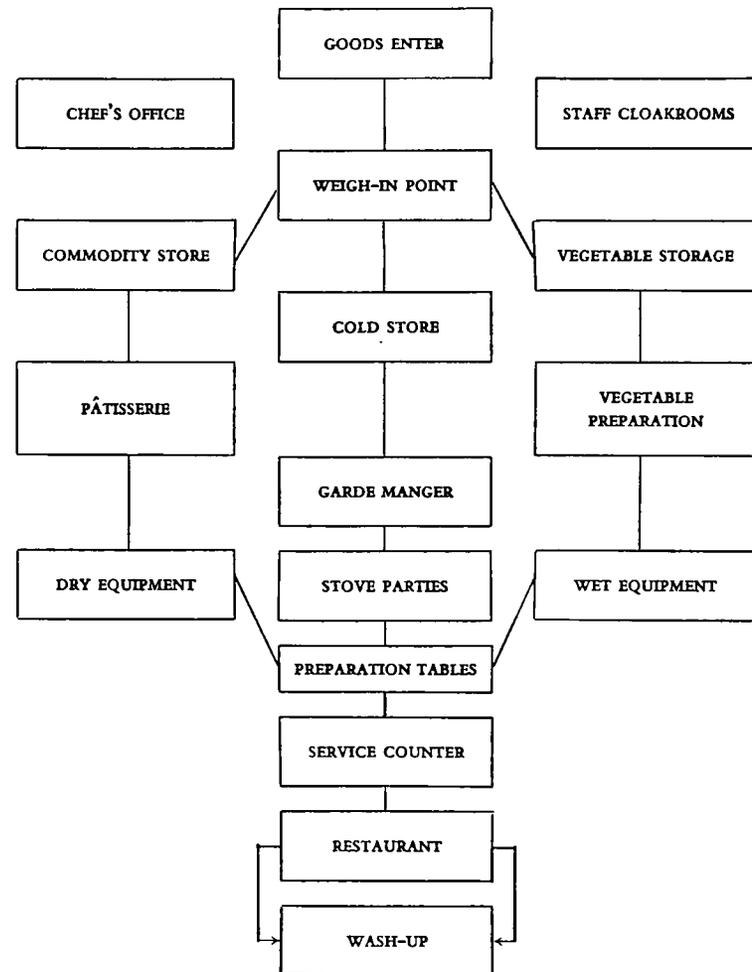
Often times taking their drinks with them into the dining area. Hence, adjacency between the dining and drinking area is required.

### Food Preparation

Food preparation is one of the most important activities to be considered. From the managerial stand point the success or failure of the club hinges on an efficient and economically operated food preparation area. The main purpose of the "kitchen" area is production. Every design effort must be made to facilitate a methodical, mechanical plan of work flow.

Included in the food preparation area are the individual activities of, Food Storage, Food Preparation, Cooking, Serving, and Cleaning up. Figure 2 illustrates the typical flow associated

Figure 2



with these activities. The goal of the kitchen planner is to provide for...

"a continuous flow of goods from section to section..."<sup>6</sup> "Thus, the perfect kitchen from this point of view is one in which raw, and cooked material need the minimum amount of movement and requires only once to cover the same route."<sup>7</sup>

Along with the need to provide for a smooth work flow in the food preparation area is the need to provide for adequate and effective storage space. Storage of food items generally consists of three types; dry commodity, vegetable, and cold storage. The total area needed for food storage should "...not generally exceed one-fourth of the kitchen area and the commodity or dry goods store is seldom more than a room representing 8% to 10% of the total kitchen area."<sup>8</sup> Allocation of space among the three types of provision storage is variable, and

regulated by the purchasing practices and menu plans of the individual situation. A good estimate of space needed can be calculated by allotting "0.2 sq. ft. of vegetable storage per person accommodated in the dining room and 0.4 sq. ft. of commodity (dry goods) storage..."<sup>9</sup>

The amount of space required for actual meal preparation is dependant upon a number of variables. Foremost among them being the type of menu and the number of meals to be provided. Simpler menus and larger amounts of production tend to demand kitchens with a lower square foot/patron served ratio. For purposes of preliminary space allocation, allow one-third of the space allotted for dining. "In the case of a Yacht Club or Country Club the kitchen should be of sufficient scope to provide service

for all dining areas operating at peak capacity."<sup>10</sup> The design of this space should be such that normal operations at less than peak load can be efficiently carried out and still provide for efficiently maximum production.

The food service and storage spaces should be located centrally among the dining spaces they are to serve. The storage spaces should be located adjacent to a service entrance for ease of delivery, and immediately accessible to the preparation area.

#### Retail Sales

Preparation should be made for the display and sale of boat supplies and miscellaneous items. These items include clothing, life-jackets, small parts, electronic accessories and possibly furniture. The boating public is proud of

its nautical heritage and is more than willing to pay in order to display this heritage to the world.

A relaxed atmosphere should be present in this area. High pressure sales has no place in the Country Club.

The objective of the proprietor of such a facility is two-fold. The merchandise selection must be suited to the particular clientele. This can be accomplished only through careful analysis and preferably experience. Display of merchandise must also be tailored to the particular club situation. Secondly, and perhaps more important, the customer must be made to feel comfortable and at ease once inside the sales area. Scattered seating, attractive displays, and interesting decorative finishes are elements which help to accomplish this

important task. The second objective gives the designer the most opportunity to assist in the successful operation of the retail facility.

"In order to please the customer, you must first please the woman."<sup>11</sup> This statement best describes the key to making the facility comfortable and relaxing. The logic behind it is simple and obvious. A woman who is comfortable and interested in something in the area does not pressure her husband into leaving before he has had his chance to fully examine the latest electronic equipment for his boat. Women also buy most of the clothing and accessories sold, thus, providing a major source of income.

Security is of great importance to a retail sales operation. Vision should be as unobscured as possible. Access and

egress should be through one, at most two, easily controllable passages. Cashier stands should also be located at each entrance.

Another, activity separate from Retail Sales may be accommodated in this area. Many Yacht Clubs own fleets of small board boats or even small cruisers. These can be used by members at any time with a reservation. Control of these rentals and charges affiliated with them can also be accomplished in the retail area. No special equipment or furnishings are required for this activity as it usually entails only the recording of transactions in a ledger.

The type of proprietorship involved with such a retail sales activity also deserves attention here. It is common practice among Golf-Oriented Country

Clubs for the Golf Pro to operate the pro shop and cart rentals. A concession type agreement exists between the pro and the club. A similar situation is expected in the Yacht Club. Hence, access must be provided to the proprietor at any time.

#### Indoor Recreation

Seasonality is an obvious factor which affects club membership activity. Characteristically, and understandably, Yacht Club activity is at its high point during the summer months. In order for the Yacht Club to effectively serve its members the year 'round, indoor recreation activities need to be provided for.

Indoor Recreation can be divided into two classifications; small scale and large scale. Included in the small scale recreation area are electronic

games, ping-pong, table games, etc.

While basically a children's area it is inevitable that on occasion an adult will succumb to the mystical lure of the electronic video game and venture into the area. As a primarily child centered activity area the environment created should be structured towards the adolescent body. Anthropometrics of the teenagers should determine the scale and furnishings of this area. Refreshments, in the form of vending machines should be provided in, or adjacent to, this space. Special care should also be given to the accoustical problems created by such an area. Containment of the noise created within this area is suggested. Visual separation of this and other recreation areas from the passive dining, drinking, and relaxation activities

is also suggested.

Large scale indoor recreational activities are associated with the adult member. Physical fitness is the central idea for this group. Indoor tennis, jogging, sauna, whirlpool, etc. are indicative of the types of activities being addressed. The building type most closely related to this aspect of the club in terms of similar activities is the Health Spa. It is not the purpose of the club to provide all the amenities of the spa. However, the same activities should be provided for on a more limited scale.

The space or spaces provided should promote a friendly atmosphere. For many participants physical fitness is only a secondary consideration. The work out area is rapidly becoming the single's bar of the 80's. Thus, provision should be made for casual conversation in as many

situations as possible. Alcoholic beverages may even be supplied to parts of this area.

#### Regatta Organization

Regatta is the term used to describe a series of sailing races. One of the major functions of every Yacht Club is the organization and sponsoring of one or more Ragattas per year. The races are conducted by fleets, fleets being the division of boats into units comprising of boats into units comprising of boats of similar design and speed. A race is conducted by a race committee which controls the start and finish of the race through the use of a series of flags and horn blasts. In order to do this the race committee must have complete, unobstructed vision over the entire race course. This is usually

accomplished through the use of a committee boat. However, a growing aversion to the boredom of spending hour after hour aboard a bobbing committee boat has been observed. An effort to accommodate this activity in some sort of land based manner is highly suggested. Note that a land based committee station is only practicle in races involving small boats. Larger vessels require courses frequently more than two miles in length. The committee boat must move from mark to mark during these races, thus, it is necessary to use the traditional committee boat system.

Before a regatta the skippers of each vessel are called together in what is known as a Skippers Meeting or Captains Meeting. In this meeting the governing rules of the race are discussed and the general course boundaries estab-

lished. This area requires separation and a degree of isolation from the social aspects of the club due to the high degree of importance of the information exchanged during these meetings and the importance of complete understanding. For once the race is underway, it is too late to ask questions. A view of the lake from this area is advantageous because of the helpful possibility of pointing out land marks to questioning skippers. Adjacent to this space there should be space for weather equipment such as wind vanes, barometers, and wind speed indicators which are helpful in planning race strategies. Due to the possible high cost of this equipment security is of course necessary.

In case of a dispute concerning the rules or some other aspect of a race the

race committee conducts hearings and hands down decisions which may alter the outcome of a race. In order to do this the committee needs the same degree of privacy as was required in the skippers meeting. For this reason it is recommended that the space created for one be designed so as to accommodate the other.

The social aspect of a Regatta is such that it requires separation of these facilities from the other social areas of the club. For often the Regatta is the biggest event of the year and the attendance can number many times the clubs normal occupancy load. At times of major regattas most of the site is usually converted to some sort of constructed use. Many racers choose to camp out rather than stay in an expensive hotel or motel. Some portion of the lawn area should be

allocated for this "tent city". Many clubs prefer to provide seating and spectator facilities on the lawn area rather than in the club house itself. Some sort of temporary shading device is required for this activity.

#### Business Operations

The managerial aspects of a Yacht Club are similar to those of any profit oriented business. The differences occurring in the nature of club operation. Records must be kept pertaining to Boat Storage Rentals, Membership Roles and Accounts, Food Service control and planning, and Boat Repair Services.

The general managerial duties of the club are under the control of the club's manager. He may or

may not have an assistant, depending upon the size and scope of the club. The managers duties are mainly supervisory in nature. He oversees the operations of all other areas of club operation. Different Managers may place a greater or lesser degree of importance on certain aspects of club operations, as is their prerogative.

One or two Accountants/Bookkeepers are usually employed to handle the record keeping duties. All purchases made in the club are done on a non-cash basis. (With the exception of some retail sales.) The member simply signs his receipts, or meal checks. At the end of the billing period the bookkeeping department prepares a statement of charges which is presented to the member for payment.

The chef is in control of menu planning, ordering and receiving food supplies, and coordination of special dining events. He needs a small, private space preferably located within or adjacent to the food service area.

The harbor master is in charge of general grounds maintenance and in particular, The Harbor Area. He needs a small space to base his operations from.

#### Boat Service

Servicing the average sailboat can be a very involved process depending on its size and make. Small boats can be trailered and taken into any suitably designed maintenance facility. The real problem arises when the larger, fixed keel boats need servicing. Special equipment is needed to lift these boats out of the water and place them in a

cradling device. This cradle can then be moved about on land to the maintenance area. Close proximity to the water is advantageous for such a maintenance facility because of the weight and bulk of these boats. The facility needs to be large enough to house these large craft and still supply ample room for maneuvering equipment around and above it. Special attention should be paid to supplying overhead lift facilities. A ceiling height of thirty feet for safe operation of such cranes is recommended. The actual maintenance to be done is of such caliber as to require craftsman quality work in four areas; fiberglass, carpentry, electronics, and sail repair. Benches and private work areas for these craftsmen should be provided with easy access to the boats. There is also a need for some

kind of facility to assist in mast and rigging work. This is usually done while the boat is in the water, prior to being brought onto land. (see appendix B)

From the owners standpoint the period of repair can be an anxious, questioning one. Analogous to this is the time when ones car is being repaired. Even more directly akin to this would be if the car in question were a classic or antique requiring specialized attention. Not unlike the car owner the boat owner likes to see what is being done to his property, but for safety reasons he is not allowed into the actual work area. Provision needs to be made for the safe viewing of work currently in progress, while maintaining the degree of safety dictated by cautious planning.

## Harbor Area

Obviously the main activity of this area is the docking and storage of boats. However, certain amenities are required by owners, not only for storage but for occasional activities which may take place aboard the boat while it is docked. Some of these activities include parties, quiet relaxation, and light maintenance. Thus, because of the amount of activity present at the docks, the atmosphere needs to create a feeling of "place" rather than merely a docking facility.

One of the simplest, and yet most important comfort determining factors related to docks is that of surface treatment. Everyone has experienced walking across an asphalt street on a hot summer day and the intense pain inflicted on ones feet due to the heat absorption qualities

of the surface. As the tendency of most people around water is to discard their shoes, the same conditions exist when one walks out on the dock going to or from ones boat. Elimination of this potential discomfort is therefore highly recommended as one of the first steps toward creating a pleasant docking facility. Other necessities for this area include electrical power outlets for lights and recharging ships batteries, waste disposal units, solid and liquid, to lessen the temptation to litter the area, and storage for the boat owner. This storage is in the nature of extra life jackets, sails, etc. The type of equipment that is always needed but not enough room for on the boat. Therefore, direct access should be provided from the boat to this storage.

The concepts of privacy and territoriality also come into play in the design of a docking facility. Each boat owner is immensely proud of his property. Evidence of this can be found in the brightly colored sails and spinnakers, flown from the larger boats, an obvious attempt at establishing ones identity. Examples of the attempt to individualize and personalize ones ship are abundant, the names across the stern, the style and trimmings of the boat, and the occasional personalization of the slip space itself are a few. In spite of this striving for identity there are limits to the amount of admiration boat owners endure. Territoriality and its boundaries are easily identified. Boat owners have no objections to sharing the dock fingers which extend out between the boats, but there

exists an imaginary plane having as its line of demarcation, the line of the meeting of dock and water. Any penetration of this plane, however slight, may be cause for discomfort on the part of the infringed. Reactions may vary according to the individual and the type of infringement. Reactions range from slight discomfort for someone touching the boat to, irrate outbursts at catching someone actually aboard the boat. These tendencies naturally, should have a great influence on the designer. Every effort should be made to lessen the opportunities for confrontation.

## Outdoor Recreation

As noted in figure 3, the most popular outdoor activities in 1960-1961 were driving for pleasure, walking for pleasure, outdoor games, sports, and swimming.

Number of Activity Days per person, 12 years and over  
June 1, 1960-May 30, 1961

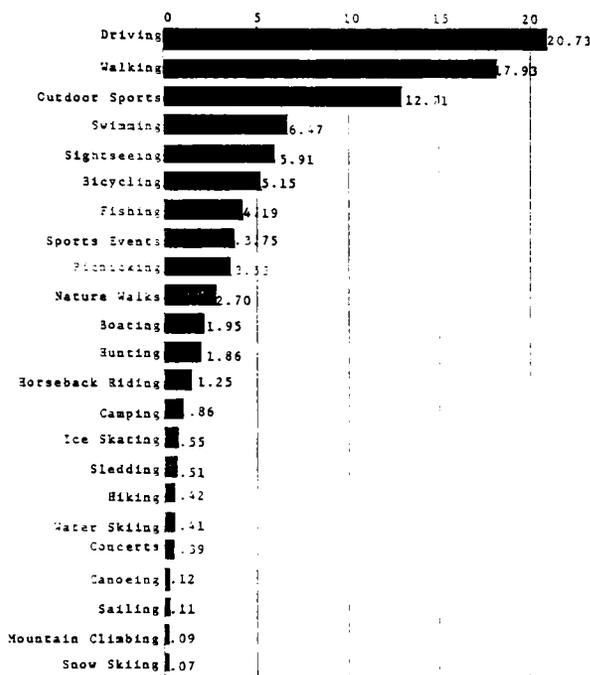


Figure 3

With possible exception of driving for pleasure it can be inferred that these activities enjoy the same popularity today. Figure 4 more closely correlates the popularity and time duration associated with the activities a Yacht Club might be particularly conducive to. As a result of the information presented in these two charts, interviews, and case studies the following is a list of suggested outdoor activities to be considered by the designer:

- Swimming
- Walking
- Picnicking
- Fishing
- Bicycling
- Basketball
- Shuffleboard
- Tennis

Indoor support facilities should also be provided for these activities. Sauna, Whirlpool, and Locker Room facilities are examples. It is important that the

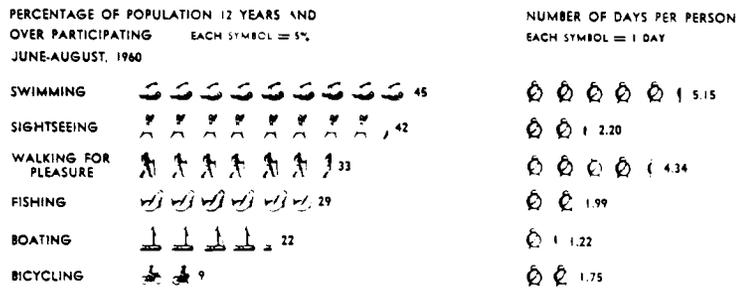


Figure 4

arrangement of these activities on the site not interfere with or detract from, the most advantageous views of and/or from the clubhouse.

### Housing

As previously stated, the connection between the Yacht Club and immediate housing is so strong that the design of the Yacht Club should influence at least the exterior appearance of said townhouse development. However, the scope of this project is such that emphasis is to be placed on the Yacht Club and the general

development of the site into a successful leisure/recreation complex. Secondary to this is the design and arrangement of the townhouse development. A basic understanding of the activities and needs of the townhouse dwelling family is required for even preliminary design consideration, and to determine the proper geographic fit on the sight.

The following is a summation of the Activity Analysis contained in the Architectural Thesis Program, "A Townhouse Community for Lake Ray Hubbard, Dallas" by Marianne Medlin. The scope and character of this project is somewhat similar to the one discussed here and the activity analysis presented is well documented and of such quality that it can be considered a authoritative, if brief, source.

The basic unit of the community is the family, and the basic unit of the family - the individual. Thus, built upon the individual, all three possess the same "needs for territory, privacy, identity, orientation, convenience, accessibility, and safety, without which an individual cannot feel the fulfillment of true individuality"<sup>12</sup> hence, family and community individuality. For simplicity for the duration of this discussion on housing, when the individual is discussed it can be inferred that the same holds true for the family and the community. This is of utmost importance when one remembers that it is the complex as a whole and the interrelationship between the individual dwelling units that this program is concerned with.

"The control over physical space which territoriality implies

becomes a means of enabling the individual or group to attain privacy, which in turn signifies the ability to control those events occurring in ones immediate environment."<sup>13</sup>

There are differing degrees of privacy needed for various activities within the dwelling. The degree of privacy required by various activities is better graphically displayed in figure 5 & 6.

The family defines its territory as the dwelling. Behind its walls the family is free to build

"...A sense of family solidarity through shared experiences and activities, opportunities for dialogues between all members, and the setting for learning how to form bonds with other human beings."<sup>14</sup>

ZONE	PERSONS								ACTIVITIES
	To be seen by	To see	To see	To be seen by	To be seen by	To be heard by	To be heard by	To hear	
PRIVATE	MOST PRIVACY								Doing Nothing
									Studying
									Sleeping
									Making Love
SEMI-PRIVATE									Exercising
									Bathing
									Dressing
									Sick Care
OPERATIVE									Washing
									Maintenance
									Laundry
									Creating
									Child Care
									Cooking
SEMI-PUBLIC									Eating
									Administering
									Child Training
									Recreation
PUBLIC									Play
									Drinking
									Entertaining
									Entering
								Leaving	
	MOST SOCIALITY								Greeting

Figure 5

Thus, a man's house is his castle and defense of it against intruders is paramount.

"The ritual entrance into this sacred territory, the threshold."<sup>15</sup>

For this reason it is necessary that

entrances in multi-family housing be protected, identified, and above all individual.

The orientation of a house, its placement of windows, the views it presents and vistas it provides for it's inhabitants express the family's view of their neighbors and community. In the case at hand it is obvious that the townhouses and the Yacht Club and possibly other facilities on the sight.

In developing and planning the areas in and around the housing development three elements should be kept in mind; convenience, accessibility, and security. Convenience is defined as the "degree of physical ease of lack of difficulty in going about ones activities from day to day within and beyond the boundary of the home."<sup>16</sup> "Accessibility refers to

the ease of circulating through all elements of the housing environment."<sup>17</sup> Security is protection from invasion of ones territory from and thing or any one who is labeled as dangerous or threatening.

PROXIMITY AND CIRCULATION DIAGRAM

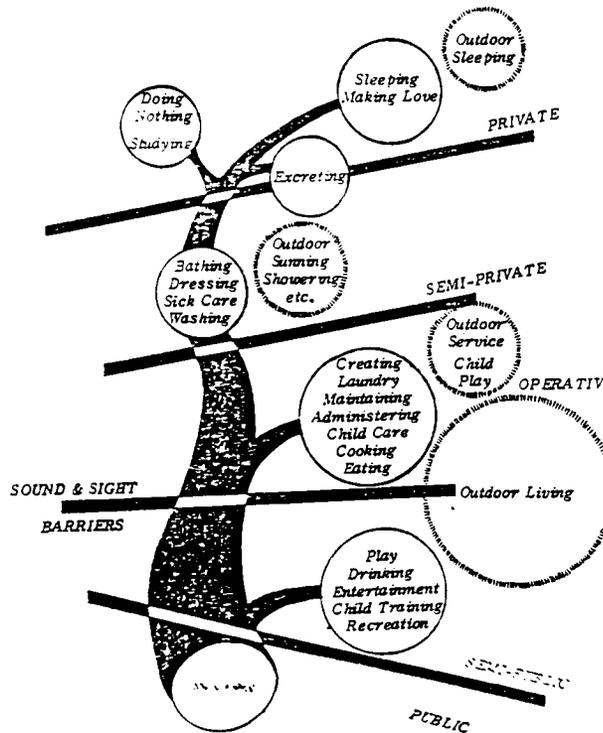


Figure 6

### Townhouse Community

The Townhouse Community is unique among housing developments with the exception of condominiums in that they share a sense of territoriality in a common site. Common areas exist which are maintained by a homeowners association. However, the private areas adjacent to each unit are the responsibility of the owners. These areas along with the individuality, the design of each unit are what give the separate units their identity.

In conclusion, the design of the townhouse complex has three primary goals. 1) Relate townhouse complex as a whole to the site development 2) Relate the individual units to the complex as a whole and 3) Provide for individual identity and territoriality.

FOOTNOTES: ACTIVITY ANALYSIS

1. Rhona Rapoport and Robert N. Rapoport, Leisure and the Family Life Cycle, (London: Routledge and Kegan Paul, 1975), pg. 186.
2. IBID., pg. 266.
3. Paul Gallico, Farewell to Sport, (New York, London: Alfred A. Knopf, 1938), pg. 330.
4. Richard Kraus, Recreation and Leisure in Modern Society, (New York, Appleton-Century-Crafts; 1971), pg. 296.
5. IBID., pg. 294.
6. John Fuller, Chief's Manual of Kitchen Management, (Bt Batsford Ltd., London, 1962), pg. 110.
7. IBID., pg. 112
8. IBID., pg. 113
9. IBID., pg. 113
10. Interview with Mel Stuart, General Manager, Hillcrest Country Club, Lubbock, Texas.
11. Interview with Ken Abbott, Owner/Manager "Paddles 'n Sails", Lubbock, Texas
12. Richard Untermann, Site Planning for Cluster Housing, (New York: Van Nostrand Reinhold, 1977), pg.39.
13. Franklin D. Becker, Design for Living, (Ithaca, N.Y.: Center for Urban Development Research, 1974), pg.16B.
14. Satenig S. St. Marie, Homes are for People, (New York: John Wiley and Sons, Inc., 1973), pg. 5.

15. Marianne Medlin, A Townhouse Community for Lake Ray Hubbard, Dallas,  
(Unpublished Thesis), pg. 16.
16. Untermann, pg. 43
17. Medlin, pg. 20

FIGURES: ACTIVITY ANALYSIS

- Figure 1. Rhona Rapoport and Robert N. Rapoport, Leisure and the Family Life Cycle, (London; Routledge and Kegan, Paul, '1975), pg.
- Figure 2. John Fuller, Chief's Manual of Kitchen Management, (B.T. Batsford LTD., London, 1962), pg. 111.
- Figure 3. Outdoor Recreation for America: A report to the President and the Congress by the Outdoor Recreation Resources Commission, 1962, pg.34.
- Figure 4. IBID., pg. 36.
- Figure 5. Robert Keenedy, The House and the Art of Its Design, (New York: Reinhold Publishing, 1953), pg. 109.
- Figure 6. IBID., pg. 112.

# SITE ANALYSIS



## SITE ANALYSIS

### Site Analysis-Physical

The site chosen for this recreational development is a 31.76 acre tract on the west shore of Eagle Mountain Lake, Tarrant County, Texas. The land currently belongs to Mr. B.R. Scott who is offering the tract for sale.

### Geographic Location

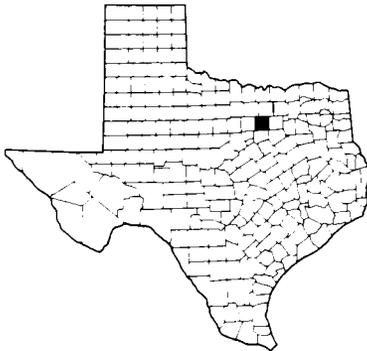


Figure 1: Map showing location of Tarrant County

Tarrant County is located in North Central Texas. The Fort Worth metropolitan area occupies almost all of Tarrant County and accounts for 97% of its population.

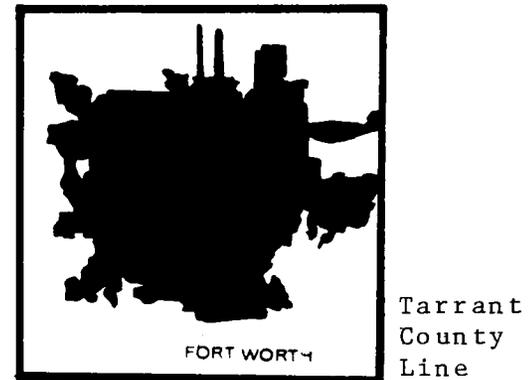
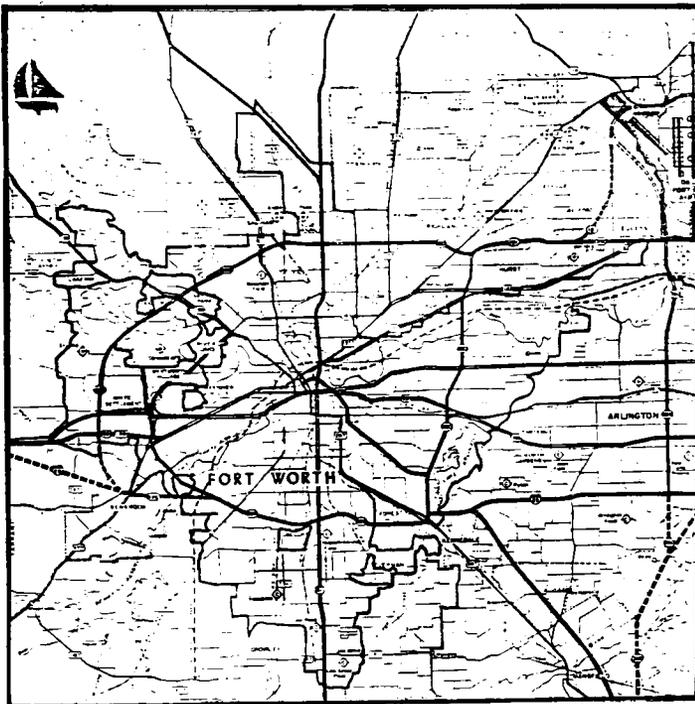


Figure 2: Map showing Tarrant County limits and Fort Worth city limits

Eagle Mountain Lake is located in the northwest corner of Tarrant County, approximately twenty-five miles northwest of Downtown Fort Worth.

The Lake is 12 miles long; 2½ miles wide, with an average depth of 24 feet, and total surface area of 8,500 square feet. The site chosen is located on the west shore, at approximately the mid-point of the lake. (see Figure 4)

Figure 3



Tarrant County Line



### Orientation

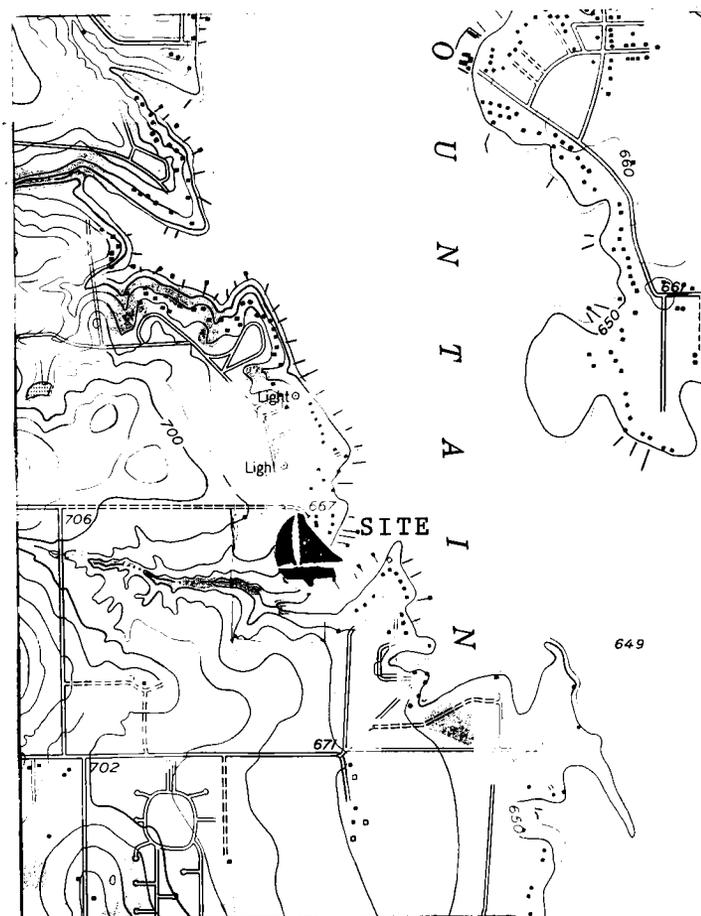
As figure 5 indicates, the site is situated on the west side of a small inlet. The east property line is also the lake shoreline and extends from the mouth to the innermost point of the inlet. The site is bounded on the north by County Road 4117, on the west by private property, and the south by Tarrant County Water Control Board Property.

### Utilities

Electricity and Co-op water are supplied to the site. (see Figure 6) The waste disposal system must be independent and self-contained in nature since there are no provisions for municipal treatment. A guide entitled "Construction Standards for Private Sewage Facilities" is included in Appendix "D" for the designer's

use. This is a copy of the standards adhered to by the T.C.W.C.B. and the City of Azle and as such serve as sufficient guidelines for realistic design parameters.

Figure 5



SITE ANALYSIS-JURISDICTIONALCity

The site is located within the five mile Extra Territorial Jurisdiction (E.T.J.) of the City of Azle. Azle has a policy of exercising greater control over its E.T.J. than most other cities. Any developer who proposes to subdivide any plot of land in this area must have his plans approved by the planning department of the City of Azle. The same zoning restrictions are applied to this area as would be applied to a project within the city limits. Therefore, a copy of the Azle Planning Commission's "working notes" for contractors consideration is included in Appendix "C" for the designers consideration.

T.C.W.C.B.

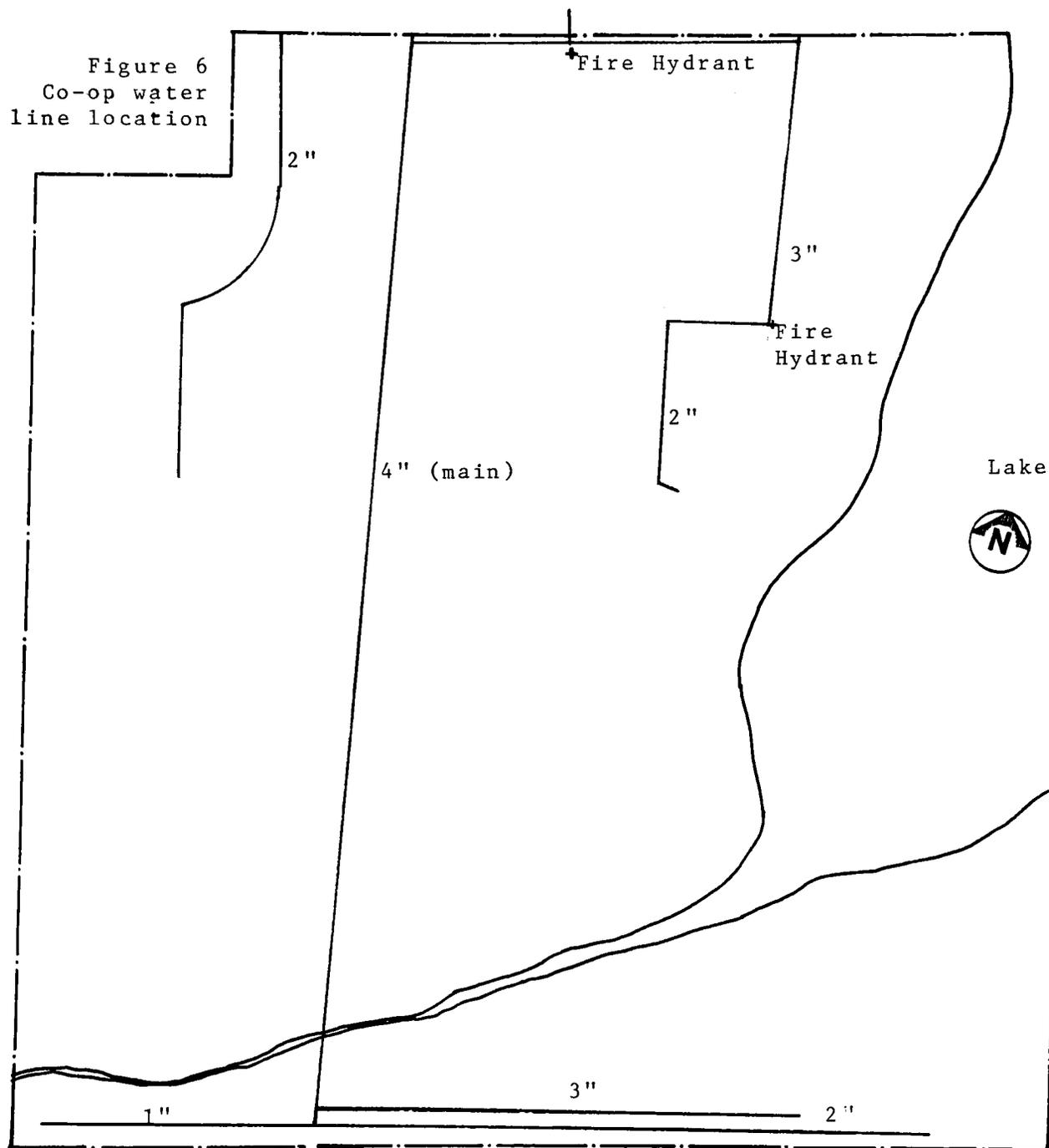
The waters edge marks the boundary of the Tarrant County Water Control Board's Jurisdiction. Eagle Mountain Lake belongs to the T.C.W.C.B. and as such, any projections into the lake must be approved by them. In order to be allowed to build a facility, such as a Yacht Club with its dependencies on the water one must first present a detailed plan of development including financial data to the board for approval. Upon approval by the board the project owner is granted a concession type access to the lake for which the board receives a certain percentage of the project's gross income. (usually 8-10%)

All projections into the lake must be designed by an approved engineer. Dredging is allowed, however, approval

from the Federal Government is required and this can be a lengthy process.

estimate will be used for a base in determining facility occupancy levels.

Harbor capacity as determined by the T.C.W.C.B. is a subjective matter. Lake Patrol Officer Harold Bierman, a veteran of thirty-five years is the representative who estimates the number of boats a harbor area can accommodate safely. When asked about capacity of the harbor chosen for this site Mr. Bierman replied, "With modern technology, and new facilities, I think one hundred sailboats would be a reasonable estimate." While this estimate can in no way be considered scientific, it is based on thirty-five years actual experience and as such will be used as the preliminary estimate for harbor capacity. Through the design process a more accurate capacity should be calculated, however, this preliminary



## Site Conditions

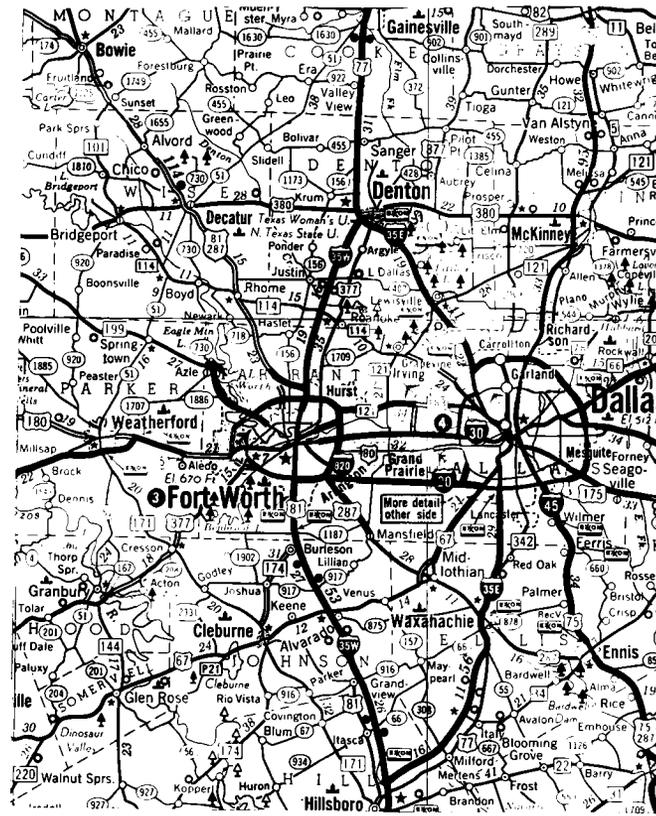
Currently there exist on the site, several older frame structures. Most of these are small frame cottages that have been built on land leased from Mr. Scott. The other existing structure is the Marina Facility. It functions as a bait and supply store and is in a general state of disrepair. Most of the structures on the site exhibit this same state. The property is to be sold as a whole and is therefore subject to development as a whole.

## Accessibility

The site can be reached by traveling northwest from Downtown Fort Worth on Highway 199, north on FM 730, east on Timberlake Dr., north on Liberty School Rd and east on Liberty School Tap (County Road 4116). All roads are of asphalt

construction and are at least two lanes wide. Surface conditions on all roads are sufficient with the exception of the Liberty School Roads which would require resurfacing to accommodate the increased traffic flow.

Figure 7

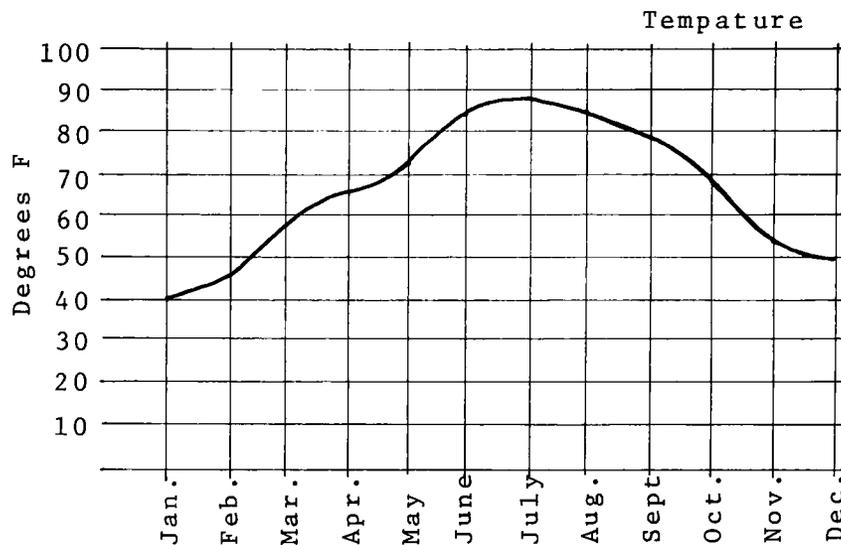
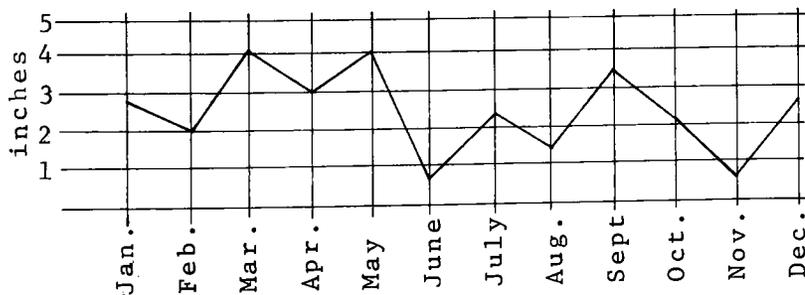


SITE ANALYSIS: CLIMATOLOGICAL/  
TOPOGRAPHICAL

Climate

Moderate is the key word when one attempts to describe the climate of the Fort Worth area. Temperatures are mild with the average in the mid sixties. Periods of extreme weather are short lived so relief from whatever discomfort is not far off. Annual precipitation is 34.55 inches and average relative humidity is 63%. Fair skies, southerly winds and dry air are the norm during the summer months. Winds, the element of nature most important to a Yacht Club and sailing are relatively constant and from a generally southerly direction. Fig. 8

Rainfall



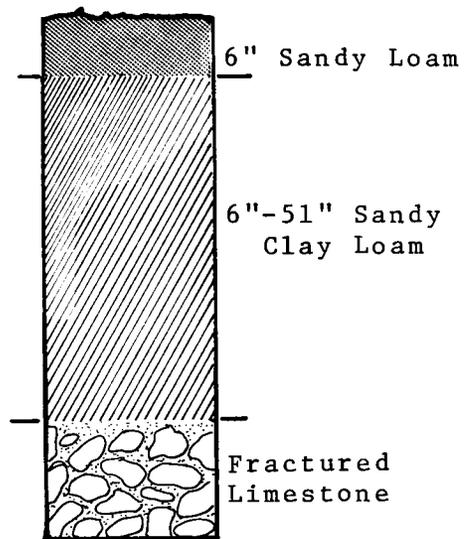
Vegetation

Located in the cross timbers geographic region of Texas, Tarrant County has as its characteristic vegetation Poast Oak and Black Jack and is dotted with prairies and different grasses. (Fig. 10)

Soil

Terrain in the site area has an average slope of 5%. A core sample of the area would show a surface layer of fine, brown, sandy loam for 6 inches and subsoil of sandy clay loam for

the next 6 inches to 51 inches followed  
by crushed, fractured limestone base.



Frost Line is 6 inches



SITE ANALYSIS: EAGLE MOUNTAIN LAKE

Eagle Mountain Lake is one of three lakes comprising The Tarrant County West Fork Lake System of the Trinity River basin. The other two are Grapevine Lake and Bridgeport Reservoir. The main purpose of these lakes is to serve as a water source for the Fort Worth area. They also provide a limited amount of flood control.

As a result of this three river system the level rarely rises more than two feet. Recently, however, the water rose an estimated 10' damaging property within the flood plane. This incidence of high water occurs very rarely. For reasons of safety and common sense construction within the 10' flood plane should be kept to a minimum.

SITE ANALYSIS: SOURCES

Soil Survey of Tarrant County, Texas, (U.S. Dept. of Agriculture Soil Conservation Service, 1981).

James A. Furrner, The Weather Almanac, (Detroit: Gale Research Book Company).

# SPACE SUMMARY



## SPACE SUMMARY

### Membership Calculation

The first task facing the programmer in the development of reasonable space allocation estimates for a Yacht Club is determining optimum club membership, and occupancy. There are many factors which affect the size of membership roles necessary to sustain any club facility. Among these are membership dues and other revenue producing aspects of the club, operating costs, and proximity of other comparable club facilities. Due to the complex nature of the problem there are no guidelines established whereby one can precisely determine membership. Therefore, alternate sources of information must be used in determining probable membership numbers. Among those used here-in are case studies of similar

facilities in the Dallas-Fort Worth area. Personal interviews with country club managers and recommendations for Marina and Country Club planning.

Membership in the golf-orientated Country Club is composed of golfers and non-golfers. The capacity of the golf course to accommodate a certain number of golfers is the base to which a percentage is added to allow for the non-golfer.

In the Yacht Club the determinant factor must be the number of boat storage facilities available to house the club fleet. In order to accurately determine the ratio of non-sailing to sailing club members, the club membership total must be divided by the number of storage facilities available. A survey of similar facilities in the Dallas-Fort Worth area shows a

ratio of 2.4 members per boat storage space to be the average.

At this point it is necessary to make a preliminary assumption as to the boat storage capacity of the proposed Yacht Club. From estimates of harbor capacity and composition of boat storage facilities is derived,

Wet (slip) storage	100 boats
Dry storage	<u>60 boats</u>
Total	160 boats

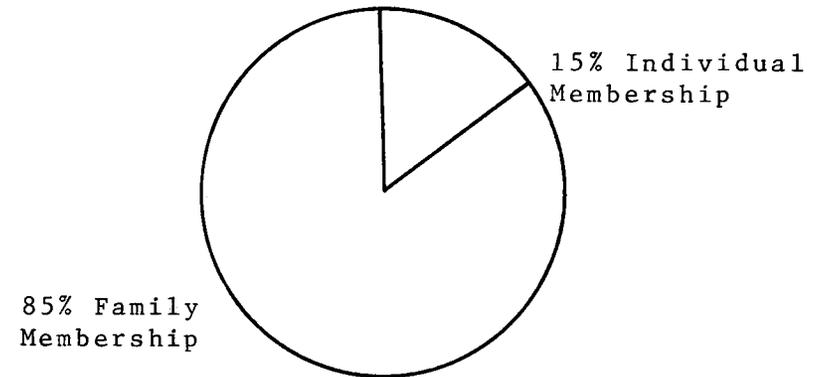
Multiplying this figure by the ratio of 2.4 members per boat space, we arrive at a figure representing approximate optimum club membership.

$$160 \times 2.4 = 384 \text{ or } 400 \text{ members.}$$

The composition of this membership is also important. It is estimated that 85% of club memberships are held by families, the remaining 15% belonging to corporations or individuals. These factors

give rise to the following calculations.

$$\begin{aligned} .85 (400) &= 340 \text{ family held memberships} \\ .15 (400) &= 60 \text{ individual memberships} \end{aligned}$$



Given this composition of membership types a figure representing total occupancy can be calculated:

$$340 \text{ (family memberships)} \times 4 \text{ members/family} + 60 \text{ individual memberships} = 1420$$

Common sense dictates that no need exists to provide for the total number of occupants. Practical experience has shown that approximately 25% of the membership

is to be considered active. This gives  
an expected occupancy of:

$$1420 \times .25 = 355 \text{ occupants}$$

Thus, the following estimates will be  
used in determining space allocations  
for the Yacht Club Facility.

Membership - 400

Club House Occupancy - 355

SPACE SUMMARY - SUMMATIONSection I

Sheltered spaces, spaces to be provided for in the built environment, ie. Clubhouse, etc.

42,647 sq. ft.

Section II

Unsheltered spaces, ancillary spaces not necessarily requiring totally enclosed design solutions, ie. parking, etc.

160,420 sq. ft.

Total Project Area      203,067 sq. ft.

SPACE SUMMARY: SPACE LISTSection I - Sheltered Spaces

-Spaces are to be grouped  
and numbered as follows-

<u>Series</u>	<u>Gross Sq. Ft.</u>
100 series Dining/Drinking	7,475
200 series Food Preparation	3,163
300 series Recreation	19,964
400 series Regatta	299
500 series Management	920
600 series Boat Service	9,373
700 series Circulation	644
800 series Support	799
Sub Total (Sheltered Spaces)	42,647

100 Series: Dining/Drinking

<u>Series</u>	<u>Sq. Ft.</u>
101 Main Dining Room 100 x 14 sq. ft./person 25% overflow	1,400
102-103 Private Dining 102 - 25 x 14 sq. ft./person 103 - 60 x 14 sq. ft./person	350 840
104 Coctail Lounge 25 x 8 sq. ft./person	200
105 Bar and Grille 30 x 12 sq. ft./person	360
106 Ball Room 200 sq. ft./person	3,000
<u>Net Square Footage</u>	<u>6,500</u>
<u>Net to Gross</u>	<u>975</u>
<u>Gross Square Footage</u>	<u>7,475</u>

200 Series: Food Preparation

201 Kitchen 1/3 x Dining Space	2,446
202 Kitchen Storage (Dry Goods) .4 sq. ft./person served x 200	84
203 Kitchen Storage (Refrigerated) .3 sq. ft./person served x 700	60
204 Kitchen Storage (Vegetable) .2 sq. ft./person served x 200	40
205 Bar Service	80
206 Bar Storage	40
<u>Net Square Footage</u>	<u>2,750</u>
<u>Net to Gross</u>	<u>413</u>
<u>Gross Square Footage</u>	<u>3,173</u>

300 Series: Recreation

<u>Series</u>	<u>Sq. Ft.</u>
301-302 Locker Room 90% membership x 14 sq. ft./person	5,040
301 Men's Locker Room = 75% Total	3,780
302 Women's Locker Room = 25% Total	1,260
303 Women's Shower 40% peak load 36 x 10 sq. ft./person	360
304 Men's Shower 30% peak load 81 x 10 sq. ft./person	810
305 Women's Restroom	100
306 Men's Restroom	150
307 Men's Sauna and Whirlpool	200
308 Women's Sauna and Whirlpool	200
309 Indoor Tennis 2 courts	9,600

310 Weight Room 400

311 Games Room 200

312 Sailing/Tennis Pro Shop 300

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Net Square Footage	17,360
Net to Gross	2,604
Gross Square Footage	19,964

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400 Series: Regatta Organization

401 Committee Room 180

402 Weather Room 80

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Net Square Footage	260
Net to Gross	39
Gross Square Footage	299

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500 Series: Management

501 General Manager 200

502-503 Accounting  
2 x 100 sq. ft. ea. 200

504 Food Service 150

<u>500 Series cont.</u>	<u>Sq. Ft.</u>	<u>800 Series: Support</u>	
505 Harbor Master	100	801 Men's Public Restroom	
		3 urinals	
506 Rental Manager	150	3 water closets	
		4 lavatories	180
<u>Net Square Footage</u>	<u>800</u>	802 Women's Public Restroom	
<u>Net to Gross</u>	<u>120</u>	5 water closets	
<u>Gross Square Footage</u>	<u>920</u>	4 lavatories	180
<u>600 Series: Boat Service</u>		803 Powder Room	100
601 Service Bay			
2 boats + work space	8,000	804 Laundry	
		storage of linen	75
602 Service Office	150		
		805 Sail Storage	300
<u>Net Square Footage</u>	<u>8,150</u>	806 Janitor Storage	80
<u>Net to Gross</u>	<u>1,223</u>		
<u>Gross Square Footage</u>	<u>9,373</u>		
<u>700 Series: Circulation</u>		<u>Net Square Footage</u>	<u>695</u>
701 Lobby		<u>Net to Gross</u>	<u>104</u>
355 (total occupancy) x		<u>Gross Square Footage</u>	<u>799</u>
1.5 sq. ft./person	533		
702 Coat Room	80		
<u>Net Square Footage</u>	<u>613</u>		
<u>Net to Gross</u>	<u>31</u>		
<u>Gross Square Footage</u>	<u>644</u>		

Section II - Unsheltered Spaces

-Spaces are to be grouped  
and numbered as follows-

<u>Series</u>	<u>Gross Sq. Ft.</u>
100 series Parking	70,000
200 series Boat Storage	63,700
300 series Games Room	36,720
Sub Total (Unsheltered Spaces)	160,420

100 Series: Parking

<u>Series</u>	<u>Sq. Ft.</u>
101 Automobile only 150 spaces x 300 sq. ft./space	45,000
102 Automobile and Trailer Overflow for Automobile only 50 spaces x 500 sq. ft./space	25,000

200 Series: Boat Storage

201 Wet Storage (slips) Adjusted to meet needs of individual boats (Activity Analysis) Number required flexible according to harbor design 100 x 312 sq. ft./space average	31,200
202 Dry Storage 60 x 375 sq. ft./space Sheltered, possibly enclosed	22,500

300 Series: Games

301 Pool 1600 ft. pool area 1600 ft. lounging area	3,200
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302 Games	
Basketball	
2 courts	4,200
Shuffle Board	520
Tennis	
4 courts	28,800

SPACE SUMMARY: SOURCES

Ramsey and Sleeper, Architectural Graphic Standard, (John Wiley and Sons, New York, 1970).

Joseph De Chiarra, Time Saver Standards for Building Types, (Mc Graw-Hill, New York et. al. 1973).

Interviews with:

Ken Abbott: Owner/Manager "Paddles n' Sails", sail boat distributorship and repairs, Lubbock Texas.

Mel Stuart: General Manager, Hillcrest Country Club, Lubbock Texas.

Case Studies

# DETAILED SPACE LIST



DETAILED SPACE LISTFormat Explanation

The following serves to establish the working format for recording the detailed space requirements for each space presented in the Space Summary Section of this chapter.

FACILITY NUMBER/DESCRIPTIVE TYPE

Area: Assignable floor area

Function: Brief description of space function

Occupancy: Number of occupants where applicable

Lighting: Lighting requirements per space

Electrical: Electrical requirements per space

Accoustical: Accoustical requirements per space

Communication:

Utilities:

Floor: Floor materials, special loading conditions where applicable

Walls: Wall materials (special conditions)

Ceiling: Ceiling height and/or materials

Use Frequency: Times of use

Security: Special security considerations where applicable

Access: Desired proximities to other areas

Air Quality: Desired environmental conditions

Furnishing and Equipment: Type and number required for use of space

Comments: Special considerations, view, etc. per space

100 SERIES: DINING/DRINKING101 - MAIN DINING ROOM

Area: 1,400 sq. ft. (additional 350 sq. ft. overflow)

Function: To provide the primary facility for the majority of dining functions

Occupancy: Maximum 100 (25 additional in overflow), varies with meal type and service being provided

Lighting: 40 f.c. variable to adjust for desired atmosphere

Electrical: Convenience outlets each wall, power outlets for service stations (refrigerator, etc.)

Communication: Telephone booths located adjacent to but out of site of space, 2 required

Utilities: Water to service stations, waste disposal (sewer) to service stations

Accoustics: Block out noise from other spaces, noise generation limited to 45 db max.

Floor: Carpet, medium finish

Walls: Medium finish, possible partition walls to close off portions of space not being used

Ceiling: 9 ft. clearance, light finish

Use Frequency: Often, various times each day

Security: N/A

Access: Access to other dining areas and kitchen area, access to cocktail lounge

Air Quality: Mechanically controlled heating and cooling

Furnishing and Equipment: Table and chairs, seating for groups from 2-8 with emphasis on 2  
 Table: Graphic Standards pg. 465  
 Chairs: Graphic Standards pg. 463  
 Arrangement: Graphic Standards pg. 30

5 service stations located throughout space, station for storage of silverware, dishes, linen, condiments, etc. Approx. size 24" wide x 38" high

102-103 - PRIVATE DINING

Area: (102)-350 sq. ft.  
(103)-840 sq. ft.

Function:  
Function: Private parties, banquet,  
etc.

Occupancy: (102)-25  
(103)-60

Lighting: 40 f.c. variable to ad-  
just for desired atmos-  
phere

Electrical: Convenience outlets each  
wall, power outlet for  
refrigerator at service  
station

Communication: Adjacency to telephone  
booths

Utilities: Water and sewer to service  
stations

Accoustics: Block out noises from  
other spaces, noise  
generation limited to  
45 db maximum

Floor: Medium finish, carpet

Walls: Medium finish, folding  
(of other type partition  
walls to provide for  
possible combination  
of spaces)

Light

Ceiling: Light finish, 9 ft. clear-  
ance

Use Frequency: Infrequent, special oc-  
caisions, mostly on re-  
quest of member

Security: Secure when not in use

Access: Access to lobby, access  
to other dining areas  
and kitchen area

Air Quality: Mechanically controlled  
heating and cooling

Furnishing  
and Equipment: Tables and chairs, seat-  
ing for groups of 4-8  
with emphasis on 4  
Tables: Graphic Standards  
pg. 465  
Chairs: Graphic Standards  
pg. 463  
Arrangements: Graphic  
Standards  
pg. 30  
Service Station: as in  
space No. 101,  
approx. dim. 8' x  
30", accessible  
to one or both  
spaces 7' screen  
wall

Comments: View of lake, special  
attention to privacy  
aspect

104 - COCTAIL LOUNGE

			high dining room use
Area:	200 sq. ft.	Security:	N/A
Function:	Space for relaxing and drinks before dinner	Access:	Access to lobby, dining room, bar service
Occupancy:	25 max.	Air Quality:	Mechanically controlled heating and cooling
Lighting:	20 f.c. variable to allow for clean up lighting, very little direct natural lighting	Furnishing and Equipment:	Table and chairs, seating for groups of 4 Tables: Graphic Standards pg. 465 Chairs: Graphic Standards pg. 463 Arrangements: Graphic Standards pg. 30
Electrical:	Convenience outlets each wall	Comments:	Intimate area, seating to provide for private conversation and intimate groupings, view desirable but not absolute
Communication:	Telephone outlet, access to telephone booths, built in "stereo" music system		
Utilities:	N/A		
Accoustics:	Block out noise from other spaces, noise generation 40 db max.		
Floor:	Medium finish, carpet 8' x 8' dance floor required (wooden) or other hard durable surface		
Walls:	Medium finish, nautical details		
Ceiling:	Light finish, 8 ft. clearance		
Use Frequency:	Often, high periods of use in conjunction with		

105 - BAR AND GRILLE

Area: 360 sq. ft.

Function: Casual eating and drinking, fast food service

Occupancy: 30 max.

Lighting: 40 f.c.

Electrical: Convenience outlets each wall

Communication: Telephone, (private number)

Utilities: N/A

Accoustics: Block out noise from other spaces, noise generation 50 db

Floor: Medium finish, indoor/outdoor carpet

Walls: Medium finish

Ceiling: Light finish

Use Frequency: Often

Security: N/A

Access: Outside access, access to dock area, access to food area

Air Quality: Mechanically controlled heating and cooling

Furnishing and Equipment: Table and chairs, seating for groups of 4  
 Tables: Graphic Standards pg. 465  
 Chairs: Graphic Standards pg. 463  
 Arrangement: Graphic Standards pg. 30

Comments:
 

- View of harbor area, pool area, high traffic space, materials & furnishings should be of durable materials
- Patron area only Bar Tender area allowed for in #205 bar service

106 - BALL ROOM

Area: 3,000 sq. ft.

Function: Formal dances, rental to local organizations

Occupancy: 200

Lighting: 40 f.c. variable to adjust for desired atmosphere

Electrical: Convenience outlets each wall

Communication: N/A

Utilities: N/A

Accoustics: Block out noise from other spaces, noise generation 50 db max.

Floor: Medium finish, carpet, small dance floor (wooden or other hard surface)

Walls: Medium finish

Ceiling: Light finish, 9 ft. clearance

Use Frequency: Infrequent

Security: Secure when not in use

Access: Access to lobby, pool area (possibly)

Air Quality: Mechanically controlled heating and cooling

Furnishing and Equipment: Seating for from 2-8, variable groupings  
 Tables: Graphic Standards pg. 465  
 Chairs: Graphic Standards pg. 463

Comments: Stage area required, tables and chairs may be stored elsewhere or behind partition wall inside space

200 SERIES: FOOD PREPARATION201 - KITCHEN

Area: 2,446 sq. ft.

Function: Food preparation for all dining facilities

Occupancy: 15

Lighting: 50 f.c.

Electrical: Power outlets as required for equipment needs, convenience outlets

Communication: N/A

Utilities: Water, waste disposal, garbage removal

Accoustics: Minimize transmission of noise created within

Floor: Light finish, easily cleaned, attractive and hygenic appearance tile up to 5 or 6 ft., water resilient materials, 72% min. reflectivity

Ceiling: As walls, 10 ft. clearance

Use Frequency: Often, daily

Security: Authorized personel only

Access: Access to dining rooms, storage, minimize separation from all dining areas, greatest accessibility to space No. 101, access to outside

Air Quality: Mechanically controlled heating and cooling, filter to remove foreign particles

Furnishing and Equipment:

- 1-4 oven general-purpose range 7 cu. ft. capacity and a total of 1,600 sq. in. boiling plates
- 1 open type bain-marie
- 2 griller-toasters with a total area of 800 sq. ft.
- 2 steaming ovens ea. of 6 cu. ft. capacity
- 2 20 gal. vegetable boilers with steaming attachments
- 1 stockpot of 16 gal. with stand
- 1 2 deck pastry oven with area of 1,300 sq. in./deck
- 2 8ft. hot cupboards w/ heated tops,
- 2 cafe sets of 160 pt capacity with 2 gal. mild & coffee urns
- 1 coolroom, 250 cu. ft.
- 1 water heater 200 gal. with attachments
- 1 mixing machine, 30 qt. capacity with attachments
- 1 potato peeler, 28 lb.

201 SERIES CONT.

- 1 slicing machine
- 1 dish-washing, capacity 1,000-1,500 pieces per hour
- Placement: Fig. 3  
Time Saver Stds.  
pg. 723
- Aisle Widths: Time  
Saver Stds.  
pg. 632

Comments: Fire protection equipment throughout and built in over ranges and other heat generating appliances

202-204 - KITCHEN STORAGE(202) DRY GOODS(203) REFRIGERATED(204) VEGETABLES

Area: (202) 80 sq. ft.  
 (203) 60 sq. ft.  
 (204) 40 sq. ft.

Function: Storage of food for kitchen use

Occupancy: None

Lighting: 10 f.c.

Electrical: N/A

Communication: N/A

Utilities: Floor drains in ea.

Accoustics: Contain noise generated within

Floor: Hard, durable, finished concrete

Walls: Durable

Ceiling: As walls

Use Frequency: Continuous

Security: Controlled access and egress

Access: Access to receiving, food preparation

Air Quality: (202) Unconditioned  
 (203) Refrigerated as to food requirements, maintain 32° F temp.  
 (204) Refrigerated as to food requirements, maintain temp. range of 20-35° F

Furnishing and Equipment: Adjustable shelves and floor storage shelves

Comments: N/A

205 - BAR SERVICE

Area: 80 sq. ft.

Function: Service of alcoholic drinks to Cocktail Lounge and Bar and Grille (possibly divide into separate spaces)

Occupancy: 1 or 2

Lighting: 20 f.c. down lighting, concentrated inside bar service area

Electrical: Convenience outlets, power outlet for equipment, locate approx. 6' o.c.

Communication: N/A

Utilities: Water, waste disposal

Acoustics: Block out noise from other spaces, noise generation 40 db max.

Floor: Water proof, non-slip surface

Walls: Medium finish, mirrors behind liquor bottles

Ceiling: Light finish

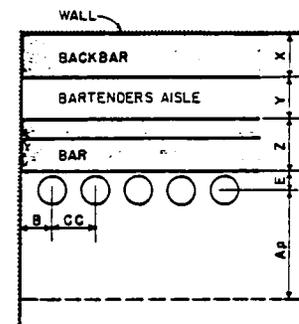
Use Frequency: As Cocktail Lounge and Bar and Grille

Security: Authorized personnel only

Access: Access to served areas, dining area, bar storage

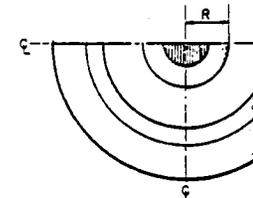
Air Quality: Mechanically controlled heating and cooling

Furnishing and Equipment: Blender, drink metering equipment, sinks, miscellaneous small appliances, Bar and bar stools



STRAIGHT TYPE—with or without stools

	Abs. Min.	Max.	Comments
A <sub>1</sub> Pub. aisle	1.6 to 4.6	4.0 to 5.0	4.6 to 5.0
B <sub>1</sub> Trap to wall	1.0 to 1.6	1.7 to 1.8	4.15 to 4.6
CC <sub>1</sub> Trap, curb to curb	1.8 to 2.0	1.0	2.2 to 2.6
E <sub>1</sub> Trap to bar	1.7 to 1.8	3	1.1 to 1.2
F <sub>1</sub> Back bar	4 to 8	4 to 7.5	7.0 to 7.5
F <sub>2</sub> Bartender's aisle	2.0 to 2.2	2.6	1.0
Z <sub>1</sub> Bar	1.1 to 2.6	1.5 to 2.6	2.8 to 3.3

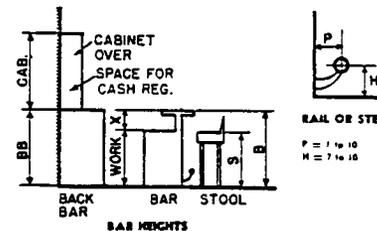


CURVED TYPES: Frame R should be at least 2 ft. other dimensions as for straight type.

Bar lengths: Allow from 1 ft. 6 in. to 1 ft. 10 in. per person for standard cars, 2 ft. for each stool.

Bar depths: No increase in depth is needed for more than 1 bartender in each man should be provided with his own set of spaces in the work counter and back bar.

Service bars: These are usually from 8 to 8 ft. long, for 1 man service from 10 to 12 ft. long if 2 bartenders are needed for busy service periods. No federal counter overhang or uppers are required. Location of other sections to benches and counters from bottom: height depending upon counterline cases it to be set in public room in the latter case, a case rest or similar device to discourage patrons from standing at the bar is often advisable.



dimensions in feet and inches

BAR OR STEP

P = 1 to 10  
H = 7 to 10

	Clear	Over
	Min.	Max.
B	1.6	1.7
BB	1.6	1.9
CC <sub>1</sub>	1.3 to 2.0	1.3 to 1.5
E	1.4 to 1.6	1.7
F	4	2.6
Z	2.1 to 2.2	1.5 to 1.7

Source: Time Saver Stds. pg. 765

206 - BAR STORAGE

Area:	40 sq. ft.		shelf storage for individual bottles, floor storage for case quantities
Function:	Storage of liquor etc. for bar service area	Comments:	none
Occupancy:	N/A		
Lighting:	10 f.c.		
Electrical:	N/A		
Communication:	N/A		
Utilities:	N/A		
Accoustics:	N/A		
Floor:	Resilient, water proof		
Walls:	Resilient		
Ceiling:	As walls		
Use Frequency:	Constant, liquor placed in storage every night and taken out every morning		
Security:	High, access by locked door only		
Access:	Access to Bar Service Area		
Air Quality:	Unconditioned		
Furnishing and Equipment:	Adjustable shelves,		

300 SERIES: RECREATION301 - LOCKER ROOMS (301) Men's  
(302) Women's

Area: (301) 3,780 sq. ft.  
(302) 1,260 sq. ft.

Function: To provide areas for men and women to change into their sporting clothes and to store their street clothes while engaging in their atheletic pursuits

Occupancy: (301) 270  
(302) 90

Lighting: 30 f.c.

Electrical: Convenience outlets each wall

Communication: Pay phone each space

Utilities: N/A

Accoustics: Block out noise from other spaces, noise generation 55 db max.

Floor: Water proof, indoor/  
outdoor carpet

Walls: Medium finish, easily  
cleaned

Ceiling: Light finish

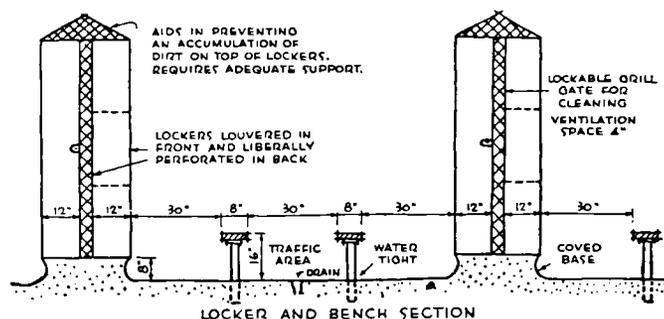
Use Frequency: Often

Security: Members and guest admitted only

Access: Access to shower, sauna, restroom, tennis courts, rental office

Air Quality: Mechanically controlled heating and cooling

Furnishing and Equipment: Lockers-Graphic Standards pg. 444



Source: Time Saver Stds. pg. 942

Comments: none

303-304 MEN'S AND WOMEN'S SHOWER

Area: (303) Women's Shower  
460 sq. ft.  
(304) Men's Shower  
960 sq. ft.

Function: Area for washing, bathing after atheletic activities

Occupancy: 36 max.

Lighting: 30 f.c., heat lamps and incandescent lighting

Electrical: Convenience outlets in dressing area at counter height

Communication: N/A

Utilities: Hot and cold water, sewage and waste disposal

Accoustics: Block out noise from other spaces, noise generation 60 db max.

Floor: Non-slip, water proof, area drains, indoor/outdoor carpet in toweling area, entire floor surface in "gang" shower area to be tiled as walls

Walls: Glazed ceramic tile, water resilient backing

Ceiling: As walls

Use Frequency: Often

Security: Entrance from locker room only

Access: Access to locker room, laundry room, indirectly to pool area

Air Quality: Mechanically controlled heating and cooling, air dehumidification

Furnishing and Equipment: (303)  
.6 "gang" showers  
Graphic Standards  
pg. 35  
.4 individual showers  
Graphic Standards  
pg. 35  
.Drinking Fountain  
Graphic Standards  
pg. 598  
(304)  
.12 "gang" showers  
Graphic Standards  
pg. 35  
.Drinking Fountains  
Graphic Standards  
pg. 598

Comments: "gang" shower heads to be 4 feet apart and 6 feet high in 304, 4 feet apart and 4½ ft. high

305-306 - MEN'S AND WOMEN'S RESTROOM

<p>Area: (305) Women's 100 sq. ft. (306) Men's 150 sq. ft.</p> <p>Function: Relief facilities for use of patrons in locker and shower rooms, and while engaged in athletic activities</p> <p>Occupancy: varies</p> <p>Lighting: 30 f.c.</p> <p>Electrical: Convenience outlets each wall, waterproof</p> <p>Communication: N/A</p> <p>Utilities: Water, sewer, waste disposal</p> <p>Accoustics: Noise generation 60 db max.</p> <p>Floor: Non-slip, water proof, area drains, tile or similar finish</p> <p>Walls: Glazed ceramic tile, water resilient backing</p> <p>Ceiling: As walls</p> <p>Use Frequency: Intermittent</p> <p>Security: N/A</p>	<p>Access: Access to Locker Room, Shower Room</p> <p>Air Quality: Mechanically controlled heating and cooling, vent fans through roof</p> <p>Furnishing and Equipment: (305) 5 toilets with partitions Graphic Standards pg. 596 4 lavatories Graphic Standards pg. 595 Misc. Accessories Graphic Standards pg. 420-421 4 mirrors Graphic Standards pg. 420 (303) 3 toilets Graphic Standards pg 596 4 Urinals Graphic Standards pg. 596 Misc. Accessories Graphic Standards pg. 420-421 4 lavatories Graphic Standards pg. 35 4 mirrors Graphic Standards pg. 420</p> <p>Comments: Direct access should be afforded from Locker/ Shower Room and from outside (pool area)</p>
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307-308 - SAUNA, WHIRLPOOL

Area: 200 sq. ft.

Function: Relaxation after strenuous exercise

Occupancy: Varies

Lighting: 30 f.c.

Electrical: Power outlets for equipment

Communication: N/A

Utilities: Water, sewage disposal

Accoustics: Block out noise from other spaces, noise generation 65 db max.

Floor: Redwood or other water resilient materials

Walls: As floors

Ceiling: As floors

Use Frequency: Varies

Security: N/A

Access: Access to respective locker room

Air Quality: Mechanically controlled, (largely maintained by apparatus within)

Furnishing  
and Equipment:

Benches:  
Graphic Standards  
pg. 469  
Whirlpool, 9' circular  
Sauna, 10 x 6

## Comments:

Plants and other decorations to enhance relaxation atmosphere  
Two units - one for male use and one for female use

309 - INDOOR TENNIS

Area:	9,600 sq. ft.	Security:	Access only after checking in at reservation desk (rental sales area)
Function:	Protected area for tennis	Access:	Access to Locker Rooms, Pro Shop
Occupancy:	8-10	Air Quality:	Mechanically controlled heating and cooling maintained at 75°
Lighting:	Two 2,000 or 1,500 watt projectors on 40' poles at center court	Furnishing and Equipment:	For court layout (2 courts) see Graphic Standards pg. 61
Electrical:	Convenience outlets for court maintenance equipment	Comments:	Possible removable roof system Phase I design as open-air facility, enclose in Phase II
Communication:	N/A		
Utilities:	N/A		
Accoustics:	N/A		
Floor:	Concrete with rubberized playing surface		
Walls:	Light finish, allow for "practice" walls (hard smooth surface with 4" paint stripe at net height)		
Ceiling:	Light finish, skylights for required clearances, see Graphic Standards pg. 61		
Use Frequency:	Daily		

310 - WEIGHT ROOM

Area: 400 sq. ft.

Function: Space for use of "nautilus" type weight equipment

Occupancy: Varies

Lighting: 50 f.c.

Electrical: Convenience outlets each wall

Communication: Access to pay phone

Utilities: Chilled water fountain

Accoustics: Block out noise from other spaces, noise generation 50 db max.

Floor: Medium finish, indoor/ outdoor carpet

Walls: Mirror panels

Ceiling: Light Finish

Use Frequency: Infrequent

Security: N/A

Access: Access to Locker Rooms, Whirlpool, Sauna

Air Quality: Mechanically controlled heating and cooling

## Furnishing

and Equipment: ·Water fountain  
Graphic Standards  
pg. 598

·"Nautilus" weight equipment free weights  
Graphic Standards  
pg. 492

Comments: Isolate space for noise control but allow for observation from outside of space

311 - GAMES ROOM

Area: 200 sq. ft.

Function: Electronic "video" games, card tables, etc. for younger club members

Occupancy: Varies

Lighting: 10 f.c., down lighting for table games

Electrical: Power outlets for video machines, convenience outlets each wall

Communication: Access to pay phone

Utilities: N/A

Accoustics: Isolate noise produced by machines, generation 40 db max.

Floor: Medium finish, carpet

Walls: Medium finish

Ceiling: Light finish

Use Frequency: Constant

Security: N/A

Access: Access to outdoors, isolate from passive activities

Air Quality: Mechanically controlled heating and cooling

Furnishing and Equipment: Video Games, approx. 2' x 2'  
 Tables: Graphic Standards pg. 465  
 Chairs: Graphic Standards pg. 463

Comments: Decorate to suit younger members

312 - SAILING AND TENNIS PRO SHOP

Area: 300 sq. ft.

Function: Sales of sailing and tennis equipment, rental of small sailboats, tennis court reservations

Occupancy: one

Lighting: 50 f.c., spot/accent lighting, showcase lighting

Electrical: Convenience outlets each wall

Communication: Telephone

Utilities: N/A

Accoustics: Block out noise from other spaces, generation 50 db

Floor: Medium finish, carpet

Walls: Medium finish, display racks

Ceiling: Light finish

Use Frequency: 8-5 or similar business hours

Security: Totally secure when closed, visual control over access and egress when open

Access: Access to tennis courts, indirect access to lobby

Air Quality: Mechanically controlled heating and cooling

Furnishing and Equipment: Display cases, cash register stands, scattered seating

Comments: Space must be comfortable and should be decorated in a nautical motif

400 SERIES: REGATTA ORGANIZATION401 - COMMITTEE ROOM

Area: 180 sq. ft.

Function: To provide room for holding of skippers meetings and regatta organization

Occupancy: Varies with side of regatta

Lighting: 50 f.c.

Electrical: Convenience outlets each wall

Communication: N/A

Utilities: Access to chilled water fountain

Accoustics: Block out noise from other spaces, generation 35 db max.

Floor: Medium finish, carpet

Walls: Medium finish

Ceiling: Light finish

Use Frequency: Infrequent, concurrent with regatta's

Security: none

Access: Isolated from most other parts of club access to weather room

Air Quality: Mechanically controlled heating and cooling

Furnishing and Equipment: Folding Tables: Graphic Standards pg. 470  
Folding chairs: Graphic Standards pg. 478  
Chalkboard - 4' x 6'

Comments: View of lake

500 SERIES: OFFICE PERSONEL501 - GENERAL MANAGER

Area: 200 sq. ft.

Function: Office for General Manager operations

Occupancy: 1

Lighting: 50 f.c., indirect, minimal glare

Electrical: Convenience outlets each wall, outlet at desk for small adding machine

Communication: Telephone

Utilities: N/A

Accoustics: Block out noise from other spaces, noise generation 35 db max.

Floor: Medium finish, carpet

Walls: Medium finish

Ceiling: Light finish

Use Frequency: Daily, 8-5 or normal business hours

Security: Lockable

Access: Access to lobby

Air Quality: Mechanically controlled heating and cooling

Furnishing and Equipment: Desk: Graphic Standards pg. 473  
 Chair: Graphic Standards pg. 463  
 Bookshelves: Graphic Standards pg. 468

Comments: Placement in overall design should be so as to provide ease of access from view of harbor area

502-503 - ACCOUNTING

Area: 100 sq. ft.

Function: General Accounting  
Activities membership  
rosters etc.

Occupancy: 1 ea.

Lighting: 150 f.c., indirect,  
minimal glare

Electrical: Power outlet for adding  
machines, convenience  
outlets each wall

Communication: Telephone

Utilities: N/A

Accoustics: Block out noise from  
other space, noise  
generation 35 db max.

Floor: Medium finish, carpet

Walls: Medium finish

Ceiling: Light Finish

Use Frequency: Daily, 8-5 or normal  
office hours

Security: Lockable

Access: Access to each other,  
indirectly to General  
Manager

Air Quality: Mechanically controlled  
heating and cooling

Furnishing  
and Equipment: Filing cabinets:  
Graphic Standards  
pg. 468  
Other as space 501

Comments: None

504 - FOOD SERVICE MANAGER

Area: 150 sq. ft.

Function: Keeping records of food shipments, catering details, meal planning (chef's office)

Occupancy: 1

Lighting: 50 f.c., indirect, minimal glare

Electrical: Convenience outlets each wall

Communication: Telephone

Utilities: N/A

Accoustics: Block out noise from other spaces (kitchen), noise generated 35db max.

Floor: Medium finish

Walls: Medium finish

Ceiling: Light finish

Use Frequency: Daily, 8-5 or normal office hours plus as needed

Security: Lockable

Access: Access to kitchen, receiving and storage area

Air Quality: Mechanically controlled heating and cooling

Furnishing and Equipment: As space #502, 503

Comments: Visual supervision of kitchen area  
Visual supervision of loading and receiving area

505 - HARBOR MASTER

Area: 100 sq. ft.

Function: Coordination of Harbor/  
Marina information,  
maintenance of harbor  
area

Occupancy: 1

Lighting: 50 f.c., indirect,  
minimal glare

Electrical: Convenience outlets  
each wall

Communication: Telephone

Utilities: N/S

Accoustics: Block out noise from  
other spaces, noise  
generation 35 db max.

Floor: Medium finish, no carpet

Walls: Medium finish

Ceiling: Light finish

Use Frequency: Daily, 8-5 or normal  
office hours

Security: Lockable

Access: Access to harbor area

Air Quality: Mechanically controlled  
heating and cooling

Furnishing  
and Equipment: As space #501

Comments: View of harbor

506 - RENTAL MANAGER

Area: 150 sq. ft.

Function: Control of boat storage  
space rentals

Occupancy: 1

Lighting: 50 f.c., indirect, suitable  
for reading/writing task

Electrical: Convenience outlets each  
wall

Communication: Telephone

Utilities: N/A

Accoustics: Block out noise from  
other spaces, noise  
generation 35 db max.

Floor: Medium finish, carpet

Walls: Medium finish

Ceiling: Light finish

Use Frequency: Daily 8-5 or normal  
office hours

Security: Lockable

Access: Access to lobby

Air Quality: Mechanically controlled  
heating and cooling

Furnishing  
and Equipment: As space 502, 503

Comments: Possibly combine with  
Harbor Master #505

600 SERIES: BOAT SERVICE601 - SERVICE BAY

Area: 8,000 sq. ft.

Function: Area for general repair of large and small boats

Occupancy: Varies

Lighting: 50 f.c.

Electrical: Convenience outlets at benches, extension outlets on retractable chords for work area

Communication: Telephone

Utilities: Water, sewer

Accoustics: N/A

Floor: Concrete

Walls: Medium finish

Ceiling: 30' clearance

Use Frequency: Sporadic

Security: Lockable

Access: Direct access to water  
| access to water closet,  
lavatory

Air Quality: Mechanically heated

Furnishing and Equipment: Overhead bridge crane  
Peripheral work benches  
30" high  
Air compressor and hoses  
for pneumatic tools  
Jib Crane  
See Appendix B

Comments: Space provided for carpenters, electronics, engine repairs, fiberglass repair, sail repair

602 - SERVICE OFFICE

Area: 150 sq. ft.

Function: Control and supervision  
of service department

Occupancy: 1

Lighting: 30 f.c., indirect,  
minimal glare

Electrical: Convenience outlets each  
wall

Communication: Telephone

Utilities: N/A

Accoustics: Block out noise from  
service bay

Floor: Durable, indoor/outdoor  
carpet

Walls: Medium finish

Ceiling: Light finish

Use Frequency: Daily 8-5 or normal  
business hours

Security: Secure from service bay

Access: Access from service bay,  
access from dock area

Air Quality: Mechanically controlled  
heating and cooling

## Furnishing

and Equipment: As space #505  
Provide for access to  
water closet, lavatory

Comments: Visual access to service  
bay

700 SERIES: CIRCULATION701 - LOBBY

Area: 533 sq. ft.

Function: Gathering point, orientation for club activities, central circulation area

Occupancy: Varies

Lighting: 20 f.c.

Electrical: Convenience outlets each wall

Communication: Pay telephone, 2 booths (also accessible from main dining)

Utilities: N/A

Accoustics: Block out noise from other spaces, noise generation 35 db max.

Floor: Medium finish, carpet

Walls: Medium finish

Ceiling: Light finish

Use Frequency: Constant

Security: N/A

Access: Access to Coctail Lounge, Main and Private Dining Rooms, Offices

Air Quality: Mechanically controlled heating and cooling

Furnishing  
and Equipment:

Couches:  
Graphic Standards  
pg. 466

Chairs:  
Graphic Standards  
pg. 466

Tables:  
Graphic Standards  
pg. 468

Lamps:  
Graphic Standards  
pg. 469

Bulletin area approx.  
6' x 8' (cork or similar  
material)

Drinking fountain  
Graphic Standards  
pg. 598

Comments:

This area is the first encountered by members and prospective members and as such should have the most elaborate furnishings and detailings. A view of the lake is also recommended, perhaps through other spaces.

702 - COAT ROOM

Area: 80 sq. ft.

Function: Storage of heavy outer coats etc. while patrons are using club facilities

Occupancy: none

Lighting: 10 f.c.

Electrical: N/A

Utilities: N/A

Accoustics: N/A

Floor: Medium finish, carpet

Walls: Medium finish

Ceiling: Light finish

Use Frequency: Varies

Security: Total visual access from lobby area

Access: Access to lobby, adjacent to restrooms (801-802)

Air Quality: Unconditioned

Furnishing and Equipment: Coat and hat racks:  
Graphic Standards  
pg. 479

Comments: none

800 SERIES: SUPPORT FACILITIES801-802 - (801) Men's Public Restroom  
(802) Women's Public Restroom

Area: 180 sq. ft. ea.

Function: Provide relief facilities for general use

Occupancy: Varies

Lighting: 30 f.c.

Electrical: Convenience outlets each wall, water proof

Communication: N/A

Utilities: Water, waste disposal, sewer

Acoustics: Block out noise from other spaces, noise generation 40 db max.

Floor: Easily cleaned, tile medium finish

Walls: As floor, medium finish

Ceiling: Light finish

Use Frequency: Intermittent

Security: None

Access: Access to lobby, indirectly to Main Dining Room, and centrally located in facility

Air Quality: Mechanically controlled heating and cooling, vent fan through roof

Furnishing and Equipment: (801)

- 3 urinals  
Graphic Standards  
pg. 596
- 3 water closets  
Graphic Standards  
pg. 596
- 4 lavatories  
Graphic Standards  
pg. 595
- 4 mirrors  
Graphic Standards  
pg. 420
- Paper towel holder  
Graphic Standards  
pg. 420

(802)

- 5 water closets  
Graphic Standards  
pg. 596
- 4 lavatories  
Graphic Standards  
pg. 595
- 4 mirrors  
Graphic Standards  
pg. 595
- Paper towel holder  
Graphic Standards  
pg. 420

Comments: None

803 - POWDER ROOM

Area: 100 sq. ft.

Function: Space for ladies to touch up make-up, rest, etc.

Occupancy: Varies

Lighting: 50 f.c.

Electrical: Convenience outlets at counter height

Communication: N/A

Utilities: N/A

Accoustics: Block out noise from other spaces

Floor: Medium finish, carpet

Walls: Medium finish

Ceiling: Light finish

Use Frequency: Intermittent

Security: N/A

Access: Access to Ladies Restroom #802 access to lobby

Air Quality: Mechanically controlled heating and cooling

Furnishing and Equipment: Counter (dressing table) 30" high, with marble top  
Mirror behind counter  
Couch: Graphic Standards pg. 466

Comments: none

804 - LAUNDRY

Area: 75 sq. ft.

Function: Cleaning and storage  
of house linens

Occupancy: Varies

Lighting: 30 f.c.

Electrical: Power outlets for washer  
(110 v.) and dryer  
(220 v. )

Communication: N/A

Utilities: Water, sewer

Accoustics: Contain noise created  
within

Floor: Water proof, medium  
finish, tile

Walls: Light finish

Ceiling: Light finish

Use Frequency: Daily

Security: Lockable

Access: Indirect access to Locker  
Room and Dining Areas

Air Quality: Mechanically vented  
(no supply)

Furnishing  
and Equipment: Washer/Dryer combination  
Graphic Standards  
pg. 426  
Shelves for linen storage  
15" high x 18" deep

Comments: none

805 - SAIL STORAGE

Area: 300 sq. ft.

Function: Storage of club owned  
small boat sails

Occupancy: N/A

Lighting: 30 f.c.

Electrical: Convenience outlets each  
wall

Communication: N/A

Utilities: N/A

Accoustics: Absorb noises created  
within

Floor: Concrete

Walls: As floors

Ceiling: Light finish, no finish  
materials

Use Frequency: Intermittant

Security: Authorized personel only

Access: Access to Rental Manager  
Office, boat storage area

Air Quality: Unconditioned

Furnishing  
and Equipment: Storage racks suspended  
from ceiling, 15' long

## Comments:

Double check clearances  
for access and egress of  
15' masts (maximum length)

806 - JANITOR STORAGE

Area: 80 sq. ft.

Function: Storage of Janitorial supplies, equipment

Occupancy: N/A

Lighting: 40 f.c.

Electrical: Convenience outlet one wall

Communication: N/A

Utilities: Water, sewage

Accoustics: Absorb noises created within

Floor: Concrete, floor drain

Walls: Concrete

Ceiling: Unfinished

Use Frequency: Intermittent

Security: Controlled access

Access: Centrally located in facility

Air Quality: Unconditioned

Furnishing and Equipment: Sink  
Graphic Standards  
pg. 595

Storage shelves for cleaning needs

Comments: none

DETAILED SPACE LIST: SOURCES

Ramsey and Sleeper, Architectural Graphic Standards, (John Wiley and Sons, New York, 1970).

Joseph De Chiarra, Time Saver Standards for Building Types, (Mc Graw-Hill, New York et. sl., 1973).

Norman C. Harris, Modern Air Conditioning Practice, 2nd ed. (Mc Graw-Hill, New York et. al., 1974).

John Fuller, Chef's Manual of Kitchen Management, (B.T. Batsford Ltd., London, 1962).

# SYSTEMS PERFORMANCE



## SYSTEMS PERFORMANCE

The following section deals with the systems to be incorporated by the designer in his solution. Particular aspects are enumerated in an effort to call special attention to design requirements which are unique or not standard operating procedure. For this reason standards of common practice will go unmentioned. This, in no way frees the designer from his responsibility to follow these standards.

### H.V.A.C.

- All units are to be mounted on rubber pads or other vibration absorbing material
- Flexible connections to be used throughout
- Ducts to be lined inside and out for noise reduction
- Selection of Grilles and Registers shall be made so as to limit noise (allowable N.C. = 35 db)
- System design will maintain temp-

erature range of 68° -73° F with relative humidity of approx. 50% except where otherwise noted

- System will incorporate individual zoning method whereby solar heat gain and heat loss will be compensated for in system heating and cooling load
- Individual rooftop or central package units may be used. If central unit system is used, equipment space must be isolated from passive, quiet areas, (ie. dining, etc.)

### Structural

- Human scale shall prevail in choice of materials and system selection
- Certain spaces require uninterrupted, column free, solutions, these are Dining Room, Ball Room, and Indoor Tennis
- Structural system shall be designed to support a minimum live load of 100 lb/sq. ft. except where required to provide for heavier loads by the Uniform Building Code and/of Appendix "C".

### Electical

- 110 V. sevice shall be provide to each convenience outlet
- All outlets located in places of possible water contact will be equipped with waterproof covers
- Circuit breakers will be used as opposed to fuses and breaker panel will be located in Janitor Storage space #806

Lighting

- Lighting system will be designed to provide for illumination as stated in Detailed Space List.
- Ballast for fluorescent light fixtures shall be chosen with an attempt to minimize noise
- Ceiling reflectance will be 80% minimum in all spaces where a "light" finish is specified
- Wall reflectance will be 30% except in kitchen where 50% minimum is required
- Floor reflectance will be 20%
- Lighting will be controlled by variable "dimmer" switches and shading devices incorporated to control adverse glare conditions
- Security Lighting will be installed on site. Pathways, parking lots, and boat docks will be illuminated at rate of 5 f.c.
- Security lighting will not produce harmful effects in residences nearby ie. glare etc.
- Security lighting will be controlled by photo-electric cells

Acoustics

- Materials and finishes shall be designed to suppress background noise which shall not exceed an average of 40 db throughout the facility.

Communication

- Separate listings will be provided

for spaces as follows.

General Manager  
Retail Sales  
Rental Manager  
Kitchen Management  
Harbor Management  
Boat Service  
Toll Phone Installations

- An Interdepartmental Communication Systems will be installed in conjunction with telephone service

Transportation

- Parking lots will be located so as to separate pedestrian and vehicular traffic
- Lots for storage of car and trailer combinations will be located immediately adjacent to ramps, Jib-Crane installations etc.
- Access to Jib-Crane and boat ramps will not be obstructed in any way
- Access to kitchen for deliveries and waste pick-up will be screened from general view

Codes, Ordinances, Regulations

- All design solutions will comply with the latest edition of the Uniform Building Code
- Application for zoning will be made in accordance with City of Azle "working notes" (Appendix "C")

Life Safety

- Exists will be provided in accordance with uniform building code regulations
- Heat activated sprinkler systems will be installed throughout

Boat Handling

- See Appendix "B"

# COST ANALYSIS



COST ANALYSIS

In order to make such a project feasible from the investor's standpoint construction phasing is necessary. Certain facilities are considered as indispensable to a minimal operation, these are:

- .Lounge
- .Cocktail Lounge
- .Main Dining Room
- .Ball Room
- .Lobby
- .Men's and Women's Toilets
- .Powder Room
- .Storage
- .Check Room
- .Men's and Women's Locker Room
- .Men's and Women's Shower
- .Men's and Women's Toilets
- .Pro Shop
- .Bar and Grille

Other facilities may be added to this "core" through proper expansion planning.

These are:

- .Private Dining and Party Rooms
- .Card Rooms
- .Porches and Terraces
- .Steam Room

Phasing of project construction shall pursue these established guidelines. Consideration should be given to this phasing in designing the Yacht Club. However, emphasis should be placed on designing the entire facility.'

Building Construction CostPhase I:

## Dining

Main Dining, Ball Room, Coctail Lounge, Kitchen, Bar Service

BB Building Type: Restaurant

Gross Sq. Ft.	5,897 sq. ft.
Unit Cost	\$69.75/sq. ft.
Cost	\$599,641

## Retail

Games, Pro Shop

Building Type: Retail Stores

Gross Sq. Ft.	575 sq. ft.
Unit Shop	\$36.10/sq. ft.
Cost	\$20,758

## Toilets/Laundry

Men's and Women's restroom, laundry

Building Type: Swimming Pools

Gross sq. ft.	788 sq. ft.
Unit Cost	\$95.15/sq. ft.
Cost	\$74,978

## Storage

Kitchen Storage, Bar Storage, Service Bay, Sail Storage, Janito Storage

Building Type: Warehouse

Gross sq. ft.	9,895 sq. ft.
Unit Cost	\$16.90/sq. ft.
Cost	\$167,226

## Office

Manager, Accounting, Harbor Master, Food Service, Rental Manager, Service Manager, Committee Room, Weather Room, Lobby, Coat Room, Powder Room

Building Type: Office

Gross sq. ft.	2,212 sq. ft.
Unit Cost	\$55.90/dq. ft.
Cost	\$123,651

## Dressing

Men's and Women's Locker Rooms/Showers

Building Type: Swimming Pool

Gross sq. ft.	7,124 sq. ft.
Unit Cost	\$38.95/sq. ft.
Cost	\$278,181

## Phase I - Construction Cost Total

Cost	\$1,264,435
Gross sq. ft.	\$ 29,209
Cost/sq. ft.	\$ 43.29

Phase II

## Dining

Private Dining Rooms, Bar and Grille

Building Type: Restaurant

Gross sq. ft.	1,783 sq. ft.
Unit Cost	\$69.75/sq. ft.
Cost	\$124,364

## Atheletics

Weightroom, Indoor Tennis

Building Type: Gymnasium

Gross sq. ft. 11,500 sq. ft.

Unit Cost \$38.95/sq. ft.

Cost \$447,925

## Construction Cost

Phase I \$1,264,435

Phase II \$ 616,518

Total \$1,880,953

$$\begin{aligned} \$1,880,953 \div 42,952 \text{ sq. ft.} &= \$43.79/\text{sq.} \\ \text{ft. use } &\$44.00 \end{aligned}$$

## Sauna/Whirlpool

Building Type: Swimming Pool

Gross sq. ft. 460 sq. ft.

Unit Cost \$95.15/sq.ft.

Cost \$43,769

City Cost Index for Fort Worth, Texas:  
93.9%
$$\$44.00 \times .939 = \$41.316$$

## Total Construction Cost

Phase I 29,209 x 41.316 = \$1,206,799

Phase II 13,743 x 41.316 = 567,806Total \$1,774,605

## Phase II - Construction Cost Total

Cost \$616,518

Gross sq. ft. 13,743

Cost/sq. ft. \$ 44.86

The figure of \$41.316/sq. ft. compares favorably with the average Country Club construction cost of \$43.38.

Cost of Land \$80,000

Landscaping

Seeding:  
1.3 acres at \$800/ acre \$1,047.00  
Ground Cover:  
300 plants at \$30.85/  
hundred \$ 93.00  
Sprinkler System:  
57,000 sq. ft. at  
\$.40/sq. ft. \$22,800.00  
\$23,940.00

Paving

70,000 sq. ft. at \$1.67/  
sq. ft. \$116,900.00

Boat Storage

Docks:  
100 at \$2,000 ea. \$200,000.00  
Dry  
\$22,500 sq. ft. at  
\$16.90/sq. ft. \$380,250.00  
Total \$580,250.00

Total Building Construction \$2,575,695  
Furniture & Equipment  
20% of building cost \$ 515,139  
Demolition: approx. 40  
buildings at 1,200 sq.  
ft. ea. 48,000 sq.  
ft. x \$2.33/sq. ft. \$ 111,840

Sub Total \$3,102,674

Fees, Profit, Contingency  
Contractors Profit 25% \$ 775,669  
Fees 8% 248,214  
Contingency 10% 310,267

Sub Total \$4,436,824

Inflation

Cost source data based on  
median July 1, 1980  
Construction documents  
complete Dec. 1, 1982  
End of construction July 1, 1984

Inflation period: 39 months  
Inflation rate: 1%/month  
Inflation of 39  
months: 39%

.39 x 4,436,824 = \$1,730,361  
+ 4,436,824

\$6,167,185

Projected Cost: \$6,167,185

Money Available

400 memberships at \$500.00 ea. average initiation	\$200,000
400 membership dues at \$50/month	\$ 20,000
Income from Dining Room and Bar fac- ilities (aprox. equal to dues)	\$ 20,000

Approximate income = \$40,000/month

Monthly income equals - 6.6% of projected  
cost

COST ANALYSIS: SOURCE

Robert Snow Means Co., Building Construction Cost Data, (Kingston, Mass. 1981).

# CASE STUDIES



CASE STUDIES

Due to the uniqueness of a project such as a Yacht Club, the availability of published critical material is minimal. Therefore, a personal survey was made of similar club operations in the Dallas/Fort worth area, and in the Lubbock area. Where possible the clubs chosen for study were selected with regard to their similarity to the situation expected in the Eagle Mountain Yacht Club; ie. Country Club facility as nucleus of housing development, club with boat storage facilities etc.

The clubs surveyed were:

Fort Worth Boat Club, Fort Worth, Texas

Lake Country Estates Country Club,  
Fort Worth, Texas

ChanChandler's Landing Yacht Club,  
Rockwall, Texas

Rush Creed Yacht Club, Heath, Texas

Hillcrest Country Club, Lubbock, Texas

Lakeridge Country Club, Lubbock, Texas

The survey's conducted were of an observatory nature. Wherein the observer merely took notes on form, functions, etc. of each club while trying not to become auspicious, thereby destroying the natural order of things. From these notes several features can be singled out as common to all clubs, these are listed below.

Common Findings:

- Most elaborate facades not only to street side also present facade to lake or course side
- Most views are of lake area
- Large lawn between house and lake front for loungeing and lake viewing
- Separation of active and passive areas
  - Athletics vs. Dining/Drinking
- Elaborate furnishings and finishes
- Nautical finishing details (Block & Tackle, ropes etc.)
- Wide variety of building materials- stucco, weathered wood, brick etc.
- Many spaces common to all-Dining rooms, main and private locker room etc.

Chandler's Landing Yacht Club in Rockwell, Texas is an AIA award winning project and as such deserves special attention. The great degree of similarity of purpose between it and E.M.L.Y.C. also enhances it's importance. The high points of the information gained from the survey are listed below.

#### Chandler's Landing Yacht Club

- A.I.A. Design Award Winner early 70's
- Same project scope as E.M.L.Y.C.
  - Yacht Club, Marina, Townhouse, Condominiums etc.
- Form
  - \*Marina, Yacht Club, Townhouses, located along shoreling
  - Private home further inland
  - \*Marina, Yacht Club, Townhouses designed to complement each other through form and materials
  - Houses (private) had no design restrictions, incongruity somewhat distracting
  - \*Landscaping and equipment also contained nautical atmosphere

#### Function

- Separation of active, passive areas
- Terraces, patios used to afford best views of lake
- People pleased with overall performance of club

# APPENDIX A



August 17, 1981

Jeffrey S. Forrest  
4405 22nd Street, Apt. 3  
Lubbock, TX 79417

Dear Jeff,

I am pleased to offer my evaluation of the potential for development of the Scotty's Camp property on Eagle Mountain Lake. As you know, I have sailed my Islander on Eagle Mountain Lake for over 10 years and have docked at both Scotty's Camp and Harbor One Marina. I am an active real estate investor in Fort Worth and a licensed Real Estate Broker.

Eagle Mountain Lake, with its deep waters and picturesque shoreline, is the most desirable boating lake in the Dallas-Fort Worth metroplex. The lake is controlled by the Tarrant County Water Control Board, which has ruled that no new marinas will be authorized on the lake. The three significant existing marinas and their slip inventories are as follows:

	<u>Covered slips</u>	<u>Sailboat slips</u>
Lake Country Marina	390	60
Harbor One Marina	30	270
Fort Worth Boat Club	30	90
Totals	<u>450</u>	<u>420</u>

It should be noted that all three marinas maintain waiting lists for slips.

Scotty's Camp, on the West side of the lake, has been operated as a fishing camp for many years. However, since the camp has docks and boat slips already in place, it can be improved to the level of a first class marina without further approval. Only deepening of the harbor or expansion beyond the present boundaries would require Water Control Board sanction. The increase in the popularity of sailing and influx of population to the metroplex virtually assures more than enough demand for the maximum number of slips that can be accommodated by the property. A restaurant and club facility would compliment the marina and be supported by the marina's traffic.

Development of the westerly portion of the property into a lake and club oriented residential community is certainly feasible. Such amenities as marina slips, club memberships, play beach, etc., have proven to be a most effective method of promoting sales in the Eagle Mountain Lake area.

In closing, I would like to say that I find the development for which you are preparing plans personally interesting and exciting. I strongly encourage you to proceed with your work and ask that you contact me when you have sufficient drawings and data for presentation to prospective lenders.

*Ronald Cagle*  
RONALD CAGLE

# Sandy Beach becomes residential area

The end of one era on Eagle Mountain Lake signaled the beginning of yet a new era. One call it progress, but old-time fisherman and boaters may be calling it something else.

Sandy Beach Camp, located on the west side of Eagle Mountain Lake near Azle, was the site of a fishing camp on the lake after it was completed in 1932. Eventually it was sold to Curtis Pritchard, who operated it until 1975.

In March 1976, Cal Druzman, the present owner/developer, purchased the 57-acre tract from the Tarrant County Water Control and Improvement District No. 1 and continued with the operation of Sandy Beach Camp. He also opened Druzman & Associates, Realtors at the same location.

Last year, the extreme drought on Eagle Mountain Lake forced Druzman to close Sandy Beach Camp. As it was a financial bust for five years, Druzman then decided not to reopen the camp, but to develop the 57 acres into a residential area with waterfront lots.

With the architectural skill of Dorland Carol Shelton plans were formulated. The hundreds of trees were to be left, and therefore the development had to be drawn around the foliage.

Additional dredging had to be done to extend the waterfront area. In January, all plans were finally approved by the Tarrant County Water Board, Tarrant County Commissioners court, Tarrant County Health Department, D C Shelton Architect, Leon Levitt Engineer-



## SANDY BEACH CAMP ... on Eagle Mountain Lake

ing and by the developer and his wife, Ann. Tierra Grande will be heavily restricted to 1,400-square-foot one-family residences. Each homesight will be over one-half acre and will have water and electricity to each. Most lots have big shade trees.

Prices range from \$26,000 to \$65,000 and owner financing is available. The lots may be seen today from 9 a. m. to dark, and throughout the week. Exclusive agent is Druzman & Associates, Realtors, located on the site.

To reach Tierra Grande, follow Texas 199 to

Azle then right on FM 730 two miles to Timberlake Road. Turn right and go approximately 1.5 miles to Stanfield and Sandy Beach Road.

Druzman spent more than 20 years as a radio/television broadcasting executive and salesman in the Metroplex before purchasing Sandy Beach Camp. His wife serves as vice president of Druzman Investments, Inc. and is a real estate appraiser and currently a director of the Fort Worth Chapter of the Society of Real Estate Appraisers.

# APPENDIX B



## APPENDIX B - BOAT HANDLING SYSTEMS

### Slip Design

Sail boats come in a variety of sizes. The smallest board boats are 7-9 feet in length, while the large cabin cruisers can be as large as 80 feet or more. The largest boat which is expected to be stored at this facility would be in the 30 to 35 foot category. The popular and numerous size class is the 20-30 foot day sailer.<sup>1</sup>

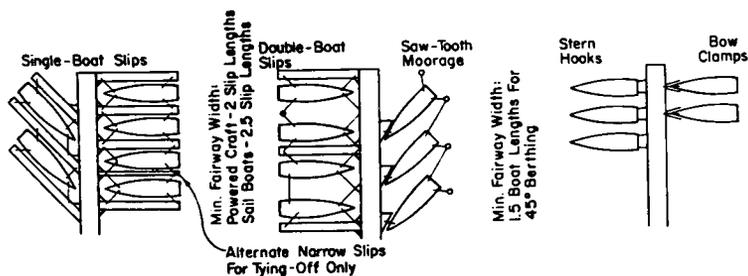


Figure 1

Figure 1 demonstrates several types of berthing systems. The optimum combination of space utilization and ease of access is the double-boat slip method.

Figure 2 gives a better explanation of the double slip berthing arrangement.

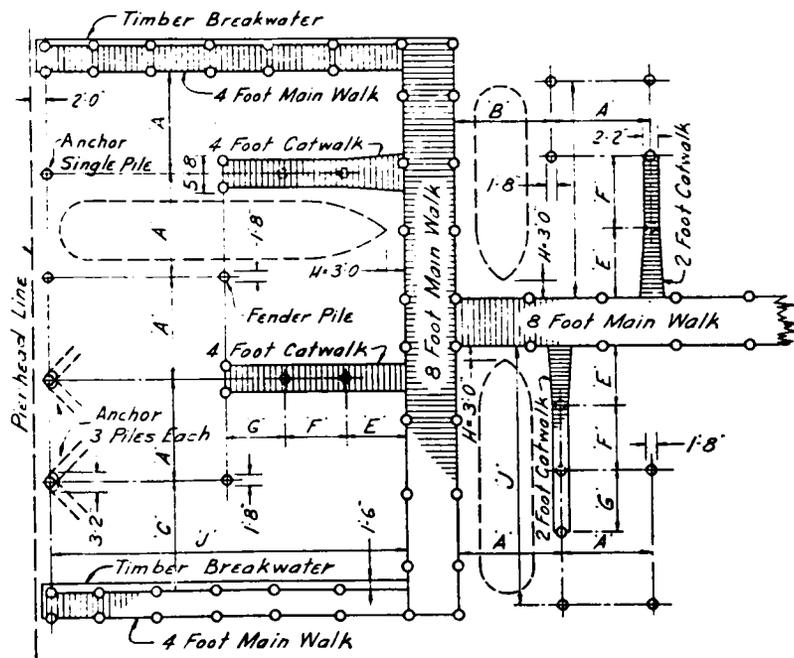


Figure 2

The chart in figure 3 can be used as a guide in designing the berthing facilities for different boat length groups.

### Hoists and Ways

"The hoists and ways of a marina serve to make the relatively infrequent launchings of craft trailored to the site for permanent berthing, to retrieve

Figure 3

DIMENSIONS FOR SLIPS AND CATWALKS															
LENGTH GROUP FOR BOATS	BEAM TO BE PROVIDED FOR	MIN. CLEARANCE FOR BEAM-TOTAL	MIN. CLEAR WIDTH OF SLIP	ALLOWANCE FOR HALF FENDER PILE	ALLOWANCE FOR HALF OF CATWALK	GROSS SLIP WIDTH TYPE "A"	GROSS SLIP WIDTH TYPE "B"	GROSS SLIP WIDTH USING 4 FT FLOATS	GROSS SLIP WIDTH TYPE "C"	USABLE WIDTH OF CATWALK	1ST CATWALK SPAN LENGTH "E"	2ND CATWALK SPAN LENGTH "F"	3RD CATWALK SPAN LENGTH "G"	TOTAL LENGTH OF CATWALK	DISTANCE "J" TO ANCHOR PILE
Up to 14'	6-7	2-3	8-10	10"	1-1"	10-9	10-6	11-8	11-2	2-0	12-0	—	—	12-0	17-0
Over 14' to 16'	7-4	2-4	9-8	10"	1-1"	11-7	11-4	12-6	12-0	2-0	12-0	—	—	12-0	19-0
Over 16' to 18'	8-0	2-5	10-5	10"	1-1"	12-4	12-1	13-3	12-9	2-0	14-0	—	—	14-0	21-0
Over 18' to 20'	8-7	2-6	11-1	10"	1-1"	13-0	12-9	13-11	13-5	2-0	8-0	8-0	—	16-0	23-0
Over 20' to 22'	9-3	2-6	11-9	10"	1-1"	13-8	13-5	14-7	14-1	2-0	10-0	8-0	—	18-0	25-0
Over 22' to 25'	10-3	2-10	13-1	10"	1-1"	15-0	14-9	15-11	15-5	2-0	10-0	8-0	—	18-0	28-0
Over 25' to 30'	11-3	3-0	14-3	10"	1-1"	16-2	15-1	17-1	16-7	2-0	10-0	10-0	—	20-0	33-0
Over 30' to 35'	12-3	3-5	15-8	10"	1-1"	17-7	17-4	18-6	18-0	2-0	12-0	10-0	—	22-0	38-0
Over 35' to 40'	13-3	3-8	16-11	10"	1-1"	18-10	18-7	19-9	19-3	2-0	12-0	12-0	—	24-0	43-0
Over 40' to 45'	14-1	3-10	17-11	10"	1-1"	19-10	19-7	20-9	20-3	2-0	14-0	12-0	—	26-0	48-0
Over 45' to 50'	14-11	4-1	19-0	10"	1-1"	20-11	20-8	21-10	21-4	2-0	9-0	9-0	10-0	28-0	53-0
Over 50' to 60'	16-6	4-6	21-0	10"	1-1"	22-11	22-8	23-10	23-4	2-0	11-0	11-0	12-0	34-0	63-0
Over 60' to 70'	18-1	4-11	23-0	10"	2-10"	26-8	24-8	25-10	25-4	4-0	11-0	11-0	12-0	34-0	73-0
Over 70' to 80'	19-9	5-2	24-11	10"	2-10"	28-7	26-7	27-9	26-3	4-0	11-0	11-0	12-0	34-0	83-0

NOTES: This tabulation is based upon use of traveler irons.  
Slip widths are to be adjusted when 3 pile anchors are used.  
Catwalks to be planned for full length as needed.  
Refer to Diagram E for typical arrangements.

FWS

them for repairs instead of drydocking, and to augment the ramp-launching of the smaller trailered craft that are not permanently berthed in the slips"<sup>2</sup>

There are two kinds of equipment that are to be used in conjunction with this project. They are the Jib-Crane and the Monorail System. These two have been chosen because of their widespread use and familiarity.

"The Jib-Crane has a relatively short, knee-braced horizontal arm extending out from a vertical post or stanchion that is strong enough to handle the entire load by cantilever action from its base."<sup>3</sup>

This crane is somewhat limited in its capacity but will be able to handle any craft which could conceivably be needed in this facility. The arm of the Jib-Crane is free to pivot 360° about its base. For this reason tethering lines are required to

base. For this reason tethering lines are required to dip the boat from swinging out too far in a pendulum-like motion. Access must be provided to the Jib-Crane. The boat and trailer will be free to maneuver into position under the crane without obstruction.

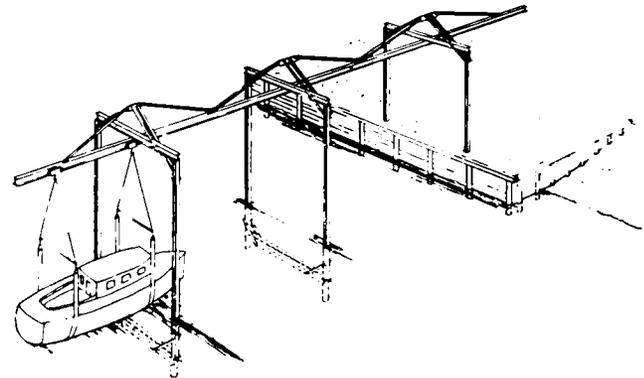


Figure 4

Figure 4 will serve to give the designer some idea of the form and function in conjunction with the boat service area. The boat is removed from the water and

placed on a dolly similar to those depicted in figure 5. It can then be maneuvered about on land by using a forklift or other small vehicle.

For more detailed information on boat handling equipment the designer is encouraged to examine the book "Boat Handling Equipment in the Modern Marina" published by the National Association of Engine and Boat Manufactures, 1959.

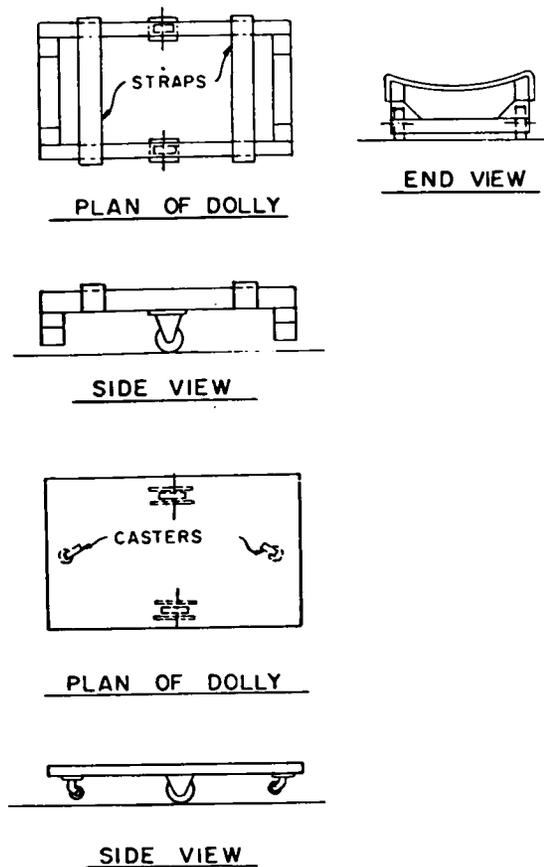


Figure 5

## Ramps and Parking

A minimum of two ramps should be provide for patron use. These should be located adjacent to the Jib-Crane and Monrail System and should conform to the dimensions and specifications in figure 6.

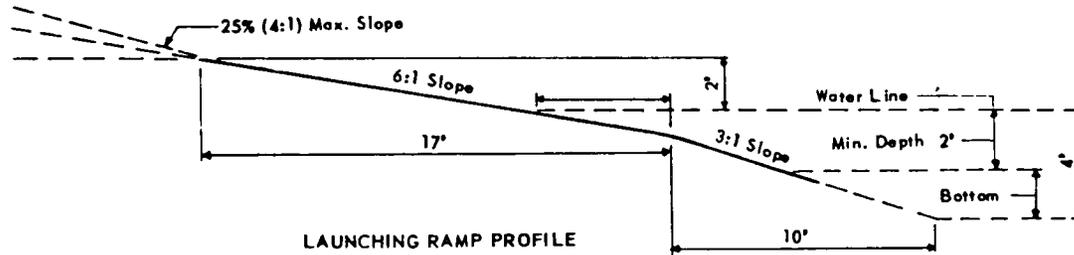


Figure 6

Figures 7 through 10 give required dimensions for two types of parking arrangements and are included here for the designers reference.

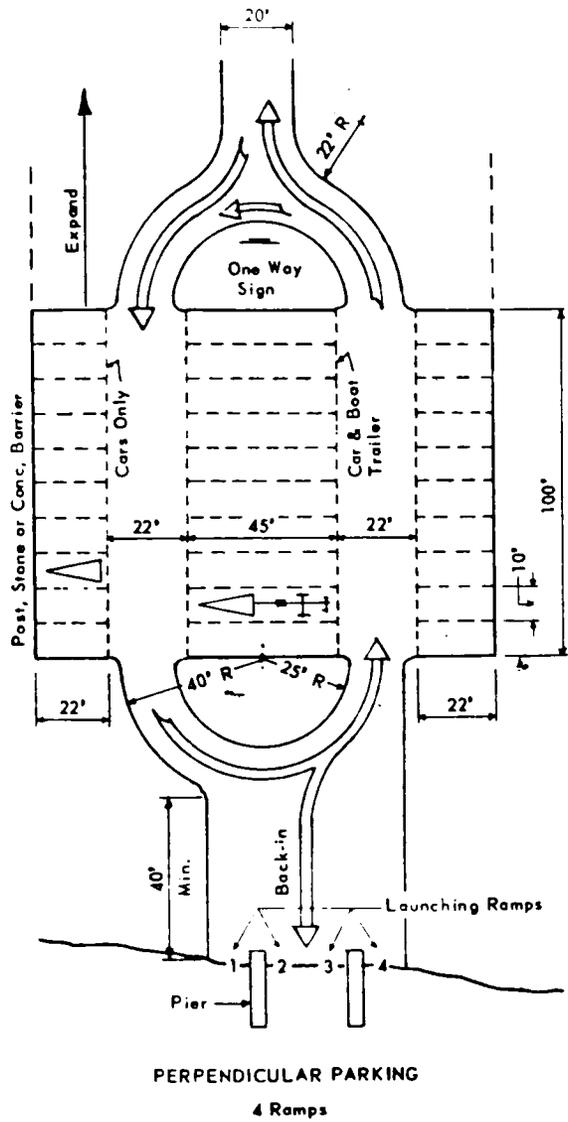


Figure 7

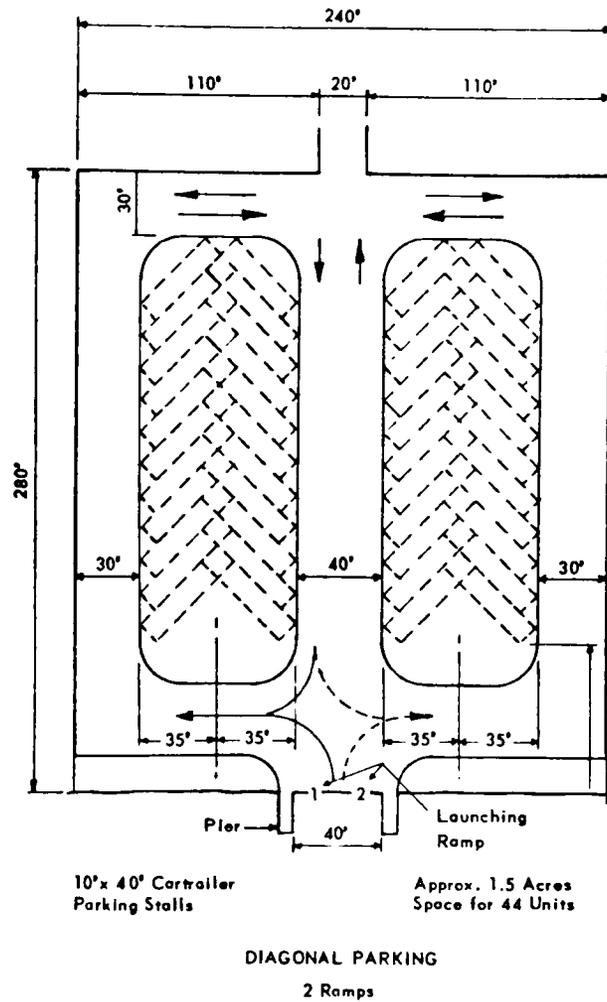
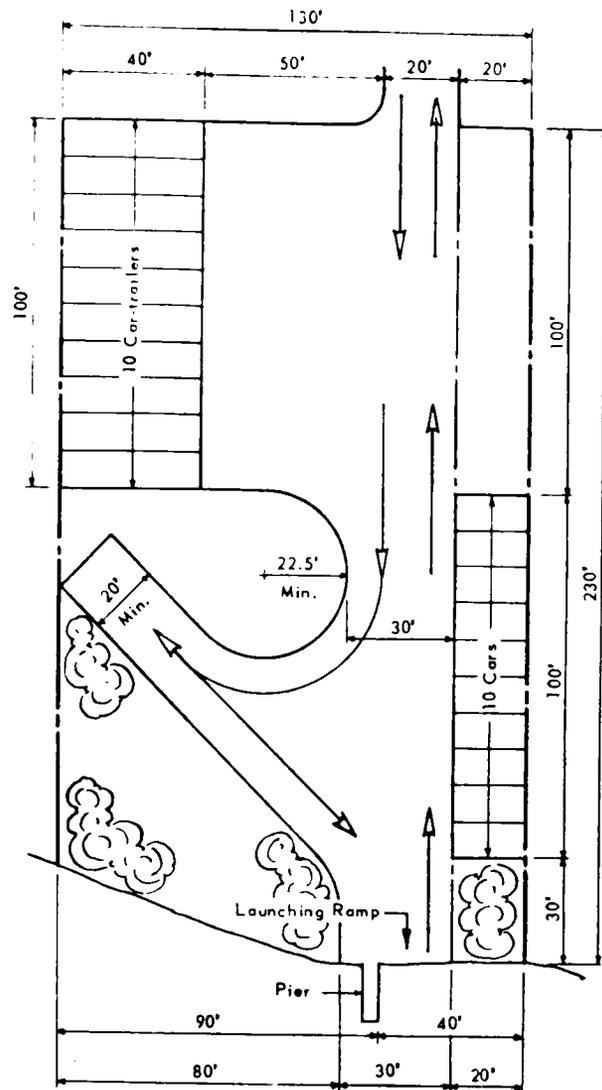


Figure 8



Approx. 0.60 Acres  
 10 Car-trailers  
 10 Cars Plus

Figure 9

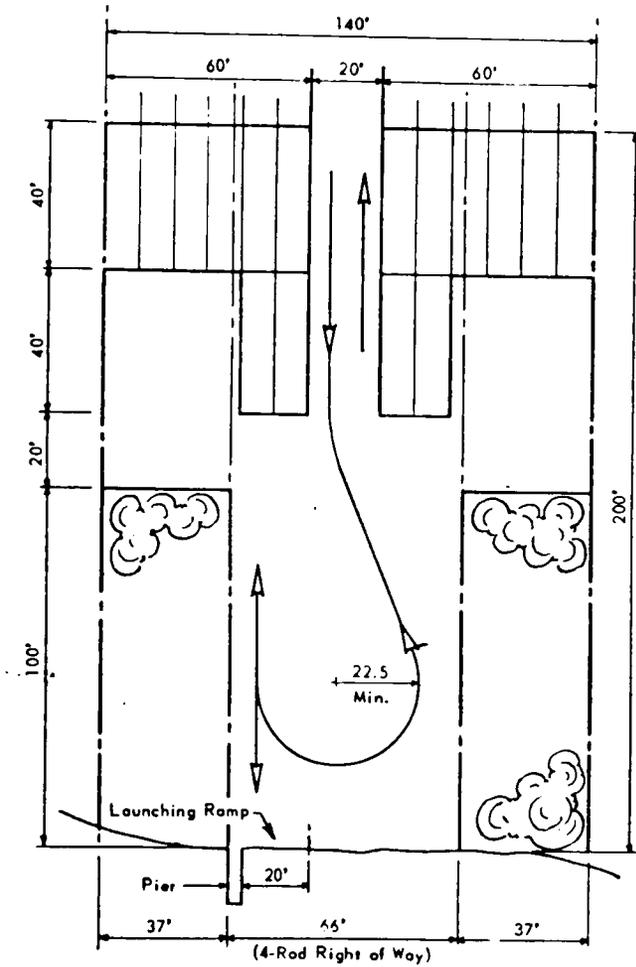


Figure 10

FOOTNOTES: APPENDIX B - BOAT HANDLING EQUIPMENT

1. Interview with Ken Abbott; Owner/Manager "Paddles 'n Sails" sailboat distributorship, Lubbock, Texas.
2. Report on Small Craft Harbors, (Task Committee on Small Craft Harbors), 1969, pg. 127
3. IBID. pg. 128

FIGURES: APPENDIX B - BOAT HANDLING EQUIPMENT

1. Report on Small Craft Harbors, (Task Committee on Small Craft Harbors, 1969) pg. 95.
2. Joseph De Chiarra, Time Saver Standards for Building Types, (Mc Graw-Hill, New York et.al., 1973) pg. 1214.
3. IBID., pg. 1214
4. Andrew R. Mack, Boat Handling Equipment in the Modern Marina, (The National Association of Engine and Boat Manufacturers, Inc., New York 1959) pg.30.
5. IBID., pg.30
6. De Chiarra, op.cit., pg. 1216
7. IBID., pg. 1216
8. IBID., pg. 1216
9. IBID., pg. 1217
10. IBID., pg. 1217

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Report on Small Craft Harbors, Task Committee on Small Craft Harbors, 1969.

Soil Survey of Tarrant County, Texas, U.S. Department of Agriculture Soil Conservation  
Service, 1981.

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BIBLIOGRAPHY: INTERVIEWS

Ken Abbott, Owner/Manager "Paddles 'n Sails" Boat Distributorship, Lubbock, Texas.

Mel Stuart, General Manager, Hillcrest Country Club, Lubbock, Texas.

E.M.Y.C.

JEFF FORREST

SPRING '82 THESIS

## A WORD

Now that the whole ordeal is over I would like to offer some advice which the reader may or may not choose to follow. First, and foremost, have fun. Enjoy what you're doing. If you don't play with your design the whole project will get old fast. Please yourself, if it comes down to it, stand up to your professors and back up your decisions with facts. Lastly, explore every option, especially the "stupid" ones. A couple of those "stupid" ideas became the major concepts in the design of E.M.Y.C.

## PROGRAM CONSIDERATIONS

Gathered from the original program and flavored with the aspirations of the designer the major

Program Considerations to be attended to in the design of E.M.Y.C. were:

- 1) Separation of incompatible activities
- 2) Involvement of total membership
- 3) Simultaneous use by many different groups
- 4) Strong visual statement from land and lake
- 5) Experience "Romantic" imagery of sailing

### 1) Separation of Incompatible Activities

-Incompatible in the sense of noisy vs. quiet, passive vs. active, young vs. old. This was accomplished by dividing the programmed activities into two groups, Active and Passive. The Active Activities being the athletics oriented activities of Locker Rooms, Racquetball Courts, Bar and Grille, etc. The passive activities being those centering on dining. Dining Rooms, Cocktail Lounge, Kitchen, etc. Along with the managerial offices and Regatta Organization. The active grouping possessed a relaxed atmosphere,

one of cut-offs and sandals, etc., while the Passive Areas became more formal, with coat and tie becoming the atmosphere.

By separating the activities in this manner it was felt that club members could more easily enjoy whatever activity they were engaged in without the fear of being intruded upon by others engaged in an activity of totally different nature.

## 2) Involvement of Total Club Membership

-The thrust of this statement is to involve the whole family in activities each member would find enjoyable. Thereby reinforcing the connection between the club and its members. The separation of activities makes achievement of this goal much easier. Automatically, some of the potential interferences are eliminated due to the fact that most of the divisions according to type of activity correspond roughly to divisions in age groups. The older patrons tending to be more passive and younger more active. However, there are of course always exceptions and allowances for these exceptions were made.

By creating the street-like

board walk dividing both activity-groupings it is possible to provide all with an opportunity to get involved in the many activities of the club without participating, ie. spectating. This also allows the newly arrived member the opportunity to know at a glance who else is at the club and what is going on.

## 3) Simultaneous Use By Many Different Groups

-Again, the separation of incompatible activities makes achieving this third goal easy. Since the types of activities are separated and segregated the allowance is automatically made for the different interest and age groups to use club facilities at their leisure without interference from or in conjunction with other groups.

## 4) Strong Visual Statement From Land and Lake

-This is a vital element in the clubs quest for identity. The white stucco building material was chosen for its contrast with the green curtain of trees beyond. This contrast, in conjunction with the many variations in form visible from the lakeside are intended to make the E.M.Y.C. a highly visible landmark. One

that club members can be especially proud of.

5) Experience "Romantic" Imagery of Sailing

-This goal is largely a result of the designer's input. The imagery incorporated in the design of E.M.Y.C. consist of both audio and visual stimuli. Some examples of such are: The board walk and the sound made when one walks over it. The triangular shapes of the white stucco walls being similar to the sails of the boats, pole construction of the deck structure which reflects the verticality found in the masts of the boats. The decks and high vantage points where one can view the widow's walks in sea board construction.

DESIGN EVOLUTION

In order to arrive at the major controlling concept many types of ordering systems were explored. Among those considered were vertical stacking, horizontal or linearity,

and linear separation. The concept chosen is considered to be an amalgamation of each of these with some other points added.

The concept chosen is one in which the separation of the Passive and Active Activities takes place along a linear axis, which connects the parking lot and the dock areas.

This linear axis acts as a street which all of the major activities of the club feed off of, a sort of outdoor corridor.

STRUCTURAL/MECHANICAL SYSTEMS

The structural system chosen is light wood framing with applied stucco exterior and wood shingle roofing. Wood framing was chosen for its economy and because of its ability to coexist so easily with the immediately adjacent

housing development to the west.

The Mechanical System is a simple, forced air system with the major fan and boiler equipment located below the main dining room and the men's locker room. The ducts and water pipes run through vertical chases located roughly in the center of each building. Then the ducts branch off and run in the truss spaces to the areas of the building they serve.