PRELIMINARY CODE SEARCH:

The following information was taken from the Uniform Building Code. Due to the limited knowledge of the building the preliminary code search is brief. As more becomes known about the building a more detailed search shall be made.

A-2 occupancy

1. 150' max. from any point in a space to an exit.

2. Two exits for every person in a space.

3. Floors above the first with a occupancy greater than ten shall have a min. of two exits.

4. Stairs:
   - occupancy load greater than 50 must be 44" wide.
   - occupancy load less than 50 must be 36" wide.
   - occupancy load less than 10 must be 30" wide.
5. Aisles loaded on one side shall be 3' wide. If loaded on both sides 3' 6" wide.

6. Restrooms:

   Fixture Ratio:
   1 man to 1 women
   allow 2 urinals & 1
   lav. per 2 WC for men;
   1 lav. per 2 WC for women

   Use Ratio:
   1 water closet per 15
   persons in restaurants;
   per 50 in public rooms
PRELIMINARY PHASING PLAN:

A major design criteria for the project shall be coming up with a design that can be easily built over a long period of time. This is a preliminary phasing plan that will probably change during the later stages of the design as more becomes known about materials and structure.

PHASE 1:

Bar
Dining
Kitchen
Lobby
Managers Office
Pros Office
Grill
Storage (½)
Locker Rooms
Pro Shop
Club Storage
Cart Storage

PHASE 2:

Chefs Office
Dining Room
Employee Lounge
Coat Check
Maintenance Center
Restrooms
Storage (½)
Game Room

PHASE 3:

Tennis Facility
Pool Facility

PHASE 4:

Tennis Enclosure
Pool Enclosure
PROJECT BUDGET:

The following budget assumes an average sq.ft. cost of $36.00 at an above average construction quality.

- Gross Area: $45,000 x $36.00 = $1,620,000
- Fixed Equip.: .8 x $1,620,000 = $129,600
- Site Devlp.: .15 x $1,620,000 = $243,000
- Total Construction Cost = $1,992,600

Site Acquisition

- Movable Equip.: .12 x $1,620,000 = $194,400
- Prof. Fees: .10 x $1,992,000 = $199,200
- Admin. Costs: .02 x $1,992,000 = $39,852
- Total Budget Required = $2,426,112
SITE DESCRIPTION:

Four Lakes Country Club is located at 41°46'27" longitude and 86°00'00" latitude in Cass County, Michigan. It is in the immediate vicinity of four recreational lakes, Eagle to the north-west, Christiana, Juno, and Painter to the north. Bordered by Lake Christiana on the north, Christiana Creek to the east, US 12 to the south and private farmland to the west, the site is fairly well defined in terms of its boundaries.

Members are drawn from the surrounding urban areas which include, South Bend, Elkhart, Niles, Dowagiac, and Cassopolis.

GENERAL CONTEXT:

Commercially, Cass county depends on the larger urban centers of surrounding counties as the largest town within its borders is Dowagiac with a population of 6500.

Of Cass counties 43,312 inhabitants only 3,916 live in cities and towns.

Ontwa township which includes Four Lakes has a population of...
5224 people, most of whom live on the four lakes.
Cass counties population has increased from 36,932 in 1960 to 43,312 in 1970. The increase is due mostly to the development of the lakes for year round home-sites. Activities around the lakes include, boating, fishing, golf, and snowmobiling.
MONTHLY AVERAGE TEMP:

Yearly Average: 49

NORMAL PRECIPITATION:

Yearly total: 36

MONTHLY AVERAGE SNOWFALL:

Yearly Total: 65

RELATIVE HUMIDITY:

Yearly Average: 63
HEATING:

Total: 6439

AVERAGE MONTHLY CLOUD COVER:

TOTAL: 769

AVERAGE WIND SPEED & DIRECTION:

Average wind speed: 11mph
EXISTING FACILITIES:

Existing facilities include a maintenance building (#1), the main clubhouse building and pro-shop/cart storage building (#2).
Scale: 1" = 600' Horizontal
    1" = 60' Vertical
SOILS:

Four Lakes Country Club is in a region of Kalamazoo association soil. It is described as deep, well drained, runs from level to undulating.

VEGETATION:

Vegetation on the site consists of the course maintained grounds, and trees of deciduous varieties. Species represented include, Hickory, Walnut, Oak, and Sycamore. The caliper ranges from 12"-20". Trees are dispersed evenly around the site borders. See pictures 1 and 2.
For the purposes of this analysis the following definitions shall be used:

Good View: An interesting scene containing natural or man made beauty. (1)

Bad View: Uninteresting landscape or unkept buildings or roads. (2)
View from the north side of Christiana lake looking south towards north end of the site.
GROWTH AND EXPANSION:

Four Lakes has been offered the adjacent 92 acres for possible expansion. However there is a 150' buffer strip which is privately owned between the two properties. Four Lakes at the present time has no plans to expand the course. However any future expansion must be to the west.
**LEGEND:**

- FOOTBALL FIELD
- PROGRAMMED BUILDING SIZE
  - 45,000 sq.ft.

**RELATIVE SCALE**

Scale: 1" = 600'
SITE 1:

Located at the north-east corner of the course, this site offers the widest variety of views. Land in this area is basically flat and is bordered by Christiana Lake and Christiana Creek. Accessible by an existing road this location would pull the clubhouse away from the noise highway and provide a beautiful setting for a building.

Building on this site would require the renumbering of the existing course. Another major design consideration would be integrating the required parking into the woods and at the same time preserve the natural setting.
SITE 2:

This location offers easy access from US 12 and a relatively flat site. All utilities are close at hand. Also there are excellent views of the course from this location.

Noise and views of the highway would be a major design criteria.
SITE 3:

Located at the north-west corner of the site, this location offers the best views of the lake and course. It would be close to the area of future course expansion.

Use of this site would require the construction of an access road, and the redesign of the existing course to accommodate the building and parking.
INTRODUCTION:

The purpose of this building type study is to try to identify current trends in clubhouse design that could be applied to the design of the Four Lakes facility.

Six examples have been chosen for their various similarities to the Four Lakes project. Each has been analyzed on the basis of the following criteria: Space, Circulation, Structure, and Siting. The buildings were taken back to basic bubble diagrams in order to discover the underlying organizing theme of the design.

Conclusions are drawn at the end of this section along with some thoughts on how they may influence the design of the Four Lakes facility.
SPACE:

* Vertical separation of social and athletic functions.
* Dining and kitchen on the second level with service stairs and elevator to ground level.
* Interlocking volumes.
* Different functions expressed as separate volumes.

CIRCULATION:

* Horizontal movement emphasized.
* No clear orientation to spaces.
* Separate public and service circulation cores.

STRUCTURE:

* Brick and stone bearing walls.
* Poured-in-place concrete columns and beams.
* Hip roof contradicts the interlocking forms expressed in plan.
SITING:

* Service entry conflicts with golfers' path to the course.

* Separate parking for social and athletic functions

* Does not seem to take advantage of course views.
SPACE:
* Athletic and social function separated vertically.
* Linear scheme which has been folded to increase building density.
* Spaces organized around golfers circulation pattern.
* Combined lounge and dining areas.
* Private banquet room.
* Multi-level dining terraces.

CIRCULATION:
* Main entry on half level between social and athletic levels.
* Circulation follows the fold on the lower floor, and the skylight on the second.
* Central vertical circulation cores.
* Visual orientation from lobby emphasized.

STRUCTURE:
* Reinforced concrete column and beam system.
SITING:

* Hill used to bring auto traffic to the half level and to help scale down front elevation.

* Dining and lounges oriented towards best views.

* Contradiction of organic form expressed with machine materials.
UNICLASS HOUSE

Guam, America
Kisho K. Kurokawa, +
P.A.E. International, Architects

Plot plan: scale 1/12,500.
SPACE:

* Space arranged in a linear pattern based on golfers activity sequence.

* Restaurant, kitchen, lounge and lockers, expressed as separate buildings along a central corridor.

* Each different node is housed under a roof which unifies them into a single building, but at the same time expresses each according to its function.

CIRCULATION:

* Main circulation corridor is based on the "street" theme.

* All major spaces face into the street.

* Attempted greek cross circulation.

STRUCTURE:

* Prefabricated steel, reinforced concrete, and beam system.
* Sited so dining and lounge areas overlook the Pacific Ocean.

* Earth mounds used to scale down elevations.

* Auto circulation on same grade as all major functions.
Site Plan:

Golfer →
Diner →
SPACE:

* Vertically separated athletic and social functions.
* One central entrance on the second level.
* Course related functions located on lower level.
* Social functions are located on upper level.

CIRCULATION:

* Auto entrance on upper floor.
* Vertical circulation integrated into central mech. core.
* Horizontal circulation kept to a min..

STRUCTURE:

* Concrete columns with wood beams and trusses.
* Outside walls are non-load bearing stone.
* Natural wood is the major interior finish material.
SATING:

* Located near small lake.
* Centralized parking.
* Earth mound used to bring cars up to social level.
* Dining areas oriented toward best views of course and lake.
* Site includes housing, tennis, and swimming facilities.
Montauk Golf and Racquet Club

Point, Long Island, N.Y.
Richard Foster, Architect
Montauk Improvement, Owner

Site Plan:

1. Kitchen
2. Dining
3. Drive
4. Bar
5. Terrace
6. Refreshment
7. Fitness bath house & locker rooms
8. Pro shop
Golfer → Diner →
SPACE:

* Vertical separation of social and athletic functions.

* Men and Women's lockers separated by circulation corridor.

* One kitchen per floor.

* Dining and lounge on upper level.

CIRCULATION:

* One common entrance for both functions.

* Separate stairs and elevator for service to upper level kitchen.

* Use circulation corridors as space boundaries.

* Service entrance to lower kitchen.

STRUCTURE:

* Mechanical and first level are poured-in-place concrete columns, and waffle slab system.

* Second floor and above, wood columns and beams with plank decking.
SITING:

* Separate parking for social and athletic functions.
* Separate swimming and tennis facilities.
* Earth mound used to scale down building.
* Building form derived from hill on which it rests.
* Used regional building materials to maintain surrounding context.
JACARANDA COUNTRY CLUB

Plantation, Florida
Donald Singer, Architect
Gulfstream Land & Development Corp., Owner

Site Plan:

Upper Level:

Lower Level:
* Separate athletic & social nodes.

* Central service core for dining, cocktail lounge & kitchen.

* Upper level bridge joins the two separate nodes.

* Separate golf & dinin entrances.

**CIRCULATION:**

* Segregated or integrated circulation between the nodes.

* Central drop-off point for the two entrances.

* Emphasis on horizontal circulation for low building mass.
STRUCTURE:
* Concrete bearing walls.
* Concrete floors.
* Steel deck roof construction

SITING:
* Strong entry statement made by two man made hills on which the building rests.
* Orientation determined by views from dining room.
* Separate parking areas for golfers and diners.
SUMMARY:

After studying these examples by looking at them in terms of space, circulation, structure, and siting, the following trends have been derived:

1. Separation of social and athletic functions.
2. Separate parking areas for the above functions.
3. Orient lounges and dining areas toward best views.
4. Design spaces to fit user sequence.
5. Clear orientation in regards to other spaces from the lobby.
6. Separate lounges from dining areas.
7. Choose pallet of materials that fit regional area context.
8. Separate main vehicular traffic from service entrance.
10. Reinforce public circulation through natural lighting.
11. Proshop should have view to the golf course and other
areas under its control.

12. Use of landscaping to help control the scale of the building.

13. Careful consideration should be given to the intersection of the building and the ground.


These criteria will be used during the design of the Four Lakes Country Club facility.
CONCEPTUAL DESIGN

Three concepts were selected at the end of the first quarter of thesis for presentation. Of these three concepts one was to be chosen and developed to the schematic stage.

Concept A:
Concept A was a linear scheme which sought expression in form through the articulation of space. Basically a one storey scheme, the circulation patterns were not clear and walking distances were long.

Concept B:
Concept B tried to develop an overall functional statement by expressing the social and athletic sides as two distinct forms. Unfortunately the massing of the building did not lend itself to a single architectural image. The circulation patterns in this scheme also were unclear.

Concept C:
Concept C was symmetrical and expressed the two major functions as forms, but had the potential of becoming a single architectural statement. Its multiple storeys compressed its size and shortened walking distances. Most importantly it started to conform to the machine vs nature, opaque vs light notion. Of all three this particular scheme seemed the
most promising and was developed.

First Schematic:

The first schematic drew upon concept C, but tried to differentiate between the two functions by breaking the symmetry. This however pointed the direction of the design towards the direction of becoming two separate buildings instead of one. It did organize the spaces in a logical manner. All that was lacking was a connecting link that would join the two sides.
Form Sketch

Schematic Plans

Schematic Sections

Proposed Site
South Elevation

Plan
North elevation

Entrance
SCHEMATIC DESIGN

The schematic design phase continued emphasize the two separate functions by a forced asymmetrical plan. There was an attempt to unify the building through the use of a central element to serve as a connecting link between the two sides. Also the social and athletic functions switched sides to allow the pool and tennis facilities to occur away from the course.

Unfortunately it was at this point where the author was forced to drop Arch. 405 because of an serious illness, but the project was beging to take shape as the spacial relationships were fairly well developed.

SCHEMATIC DESIGN
Sketch proposing link

Sketch of grid

Sketch of grid & site
Sections

Elevation (course side)

Mechanical & Structural
DESIGN DEVELOPMENT

Upon reenrolling in Arch. 405 the author decided to proceed in the same direction that he had been following before his illness. A change in design strategy was undertaken making use of study models instead of designing in plan only. This was to correct the lack of esthetic in the early schematic schemes. To correct this major deficiency the original symmetrical scheme was returned to. Roof plains were developed to reflect the functions which occurred under them. A central circulation spine was created and delineated by natural skylighting. The spine was anchored at its ends by tall stair towers to mark the ends of the building. These same towers also marked the east west corners of a square set at a 45 degree angle to the highway. The north corner was anchored by the first tee, with the south corner being defined by the paving of the entrance plaza. Radial parking was used to reinforce the entrance.

Final Design Development:
The last half of the quarter was spent in further refinements of roof elements and plan. A set of ink drawings was produced to document the entire design as it stood at the end of Arch. 405.
Study Model Plan View

Course Side

Highway Side
Site Plan

Auto level

Upper Level

Gouse Level
Sections & South Elevation

Mechanical & Structural

Mid-Term Model Plan View
North Elevation

South Elevation
Final study model North Elevation

Final Study Model South Elevation
Final Design DEv. Model plan

Course Side
North Elevation

South Elevation
FINAL DESIGN SOLUTION

The building at the end of Arch 405 lacked the vitality and strong image that was demanded by the architectural problem. The solution was a simple step back to the original ideals of nature vs machine, opaque vs light, and public vs private. By overlaying these concepts on the design as it was, a new building emerged. It was bold in expression and clear in definition. Esthetics were used to solve some weak areas such as the relationship of the pool and tennis facilities to the site and clubhouse.

The end result of this conceptual overlay was the generation of one building which houses and expresses equally the two major functions.