This is a real project and as a final project the operation of bringing together the ideas of faculty and staff verses client should be an invaluable experience.

The project itself will consist of short term housing that will probably be used by three classifications of people: 1) the weekend visitor that could be either alone or with a party, 2) the party that would occupy the housing for a period longer than a weekend, 3) the upper income group who can manipulate leave from their companies in the fall of the year. This group will require more elaborate facilities than groups one (1) and two (2), and the consideration of group three's usual environment will be reflected in the design of said units as well as in the support facilities serving these units.

There will be 150 units total of which 125 will incorporate two (2) double beds and will serve a minimum of one person and a maximum of four (4), and twenty-five (25) separated efficiencies which will provide two double beds and a folding couch. This will provide sleeping for a maximum of seven people. There will also be a packaged kitchen unit equipped with a sink, stove and refrigerator. All the units will have restaurant facilities and recreational support areas located on the site.

The identification will be the project itself in that it will be one of the first in the area to provide in-house recreation in lieu of having to depend upon the
co-operation of adjacent and surrounding facilities. Today the lack of short term housing facilities is emphasized by the fact that reservations must be obtained four to five months in advance to the planned visit. This period of overpopulating begins in early April and is extended through September and into early October. Within the last ten (10) years the lodging and feeding operations have grown from a six (6) month to a nine (9) month operation and several of the facilities are now open the entire year.

The construction of this project is scheduled within the next two (2) years and will require a phasing schedule with respect to the importance and probable need of the various facilities.

Some of the objectives of the project are: To incorporate the recommendation of the owner; self advertising and visual contact from highway 441 and Walden road; separation of parking and public facilities; limited visual contact with the existing highway strip; one central control point for both vehicular and pedestrian traffic; total electric facility; separate service facilities; outdoor and outdoor/indoor recreation; panel/pre-engineered units; bar area in lodge; attendent parking; phasing of construction; minimum destruction to existing conditions both forestry and topographical features; to provide an uninterrupted approach to the complex for the guests; development of the site such that the guests are aware of
the character of the site; the establishment of an efficient vertical and horizontal transportation systems; to provide individual retreat areas as well as active and passive recreational facilities; and to solve the basic and cultural needs (items that go beyond the physical needs) of short term housing.

The soil in the area must be given careful consideration. There are four (4) basic types of soil located on the site.

**Type:**

Type one, located on the western slopes is Ramsey Chaly Siltloam with 25° to 30° slope. The soil is in class five (5) and management group nineteen (19).


**Characteristics** Strongly acid throughout; shale or slate fragments 1/2" to 2" are on the surface and throughout the soil; soil is permeable to air, roots, and water runoff is very rapid; internal drainage is very rapid; water holding capacity is very low.

**Type:**

Type two located on the west side of the dry fork in the flat is Hamblen Silt Loam with
0% to 3% slope. This soil is in class two (2) and management group one (1).

Use and management: Cleared and used chiefly for corn; inferior drainage; generally pasture does well providing the crop is suitable to moist soil.

Characteristics: Slightly acid; very permeable and permits easy penetration of roots; water supplying capacity is high; runoff and internal drainage is slow; soil relatively free of stones or gravel.

Type:

Type three located on the east side of dry fork in the flat lands is Cotaco Siltloam with a 7% to 15% slope. This soil is in the class three (3) and management group two (2).

Use and management: Production of corn, hay, grains and pasture.

Characteristics: Imperfect drainage; most common crops can be grown.

Type:

Type four is located on the east slope and is Ramsey Shaly Siltloam with 12% to 25% slope, and is in class four (4) and management group sixteen (16).

Use and management: Poorly suited to intertilled
crops; susceptible to erosion; low water-holding capacity.

Characteristics  Severely eroded areas best used for forestry; the location of type four is the most advantageous for the sanitary system which will be a chlor. plant. However, the percolation in this area may provide some difficulty with the affluent runoff.

Transportation will consist of an in-house system that will serve the guests as a shuttle line; transporting the guests to the surrounding towns as well as trails and points of interest. At the arrival of the guest at the lodge an attendant will park the auto and retrieve it at the guests' requests. However if the guest wishes to attain information, or when short term, small deliveries i.e. flowers, telegrams, etc. arrive, there will be four temporary parking spaces available to accommodate these situations. There will be a central parking area with facilities for 70 spaces; it will provide service for the public area, the shops and restaurant, while the guests' automobiles will be parked in a storage area that will be accessible either by walking or by the parking attendant. This prevents the possibility and/or probability of the site being dissected by numerous roads and thus respects one of the owners requirements. By providing transportation to the surrounding areas in larger numbers the number
of private autos will be lessened and therefore should help to reduce the traffic congestion that is now in existence. Areas other than the parking and service areas will have access into the site for emergency and service equipment only.

My goal is to incorporate an industrialized system into the project. The repetition of the units will be two: 1) the double, 2) the group having from one to seven people. This leans in the direction of industrialized systems for several reasons. The economy of assembly line production is advantageous. This will be a new experiment in the area.

This is due to several reasons, the most prominent being that the systems building industry is relatively new and the area is just beginning to become aware of this potential. An indication to this is that there are several companies involved in producing and constructing such buildings within a forty mile radius from the Mill Creek project site.
DESCRIPTION OF CONTEXT

Located at the northern edge of the Great Smokey Mountains the area is rich in tradition and culture, these being reflected in the arts and crafts that are practiced yet today but with a new influence. No longer are these crafts done for the physical needs but for the craft shops which line the streets.

The site lies six (6) miles north of Gatlinburg, Tennessee, on the southern edge of Pigeon Forge. Access from Highway 441, a four-lane highway, is provided by a two-lane black top road which is in excellent condition. The entrance from this road is approximately 1/8 of a mile from Highway 441.

Pigeon Forge lies in the natural growth path of a triangle consisting of Gatlinburg, Knoxville, and Pigeon Forge. Highway 441 is the main link to the Smokey Mountain National Park from the north and northeast. This highway also provides easy access to the site for the Pigeon Forge fire department and ambulance service to the Sevierville Hospital if the need should arise. The police station at Pigeon Forge is also available for security checks. The city is unincorporated but there is a city owned central water system that will be available for service to the project. Since there is no public disposal system one major concern of the project will be to provide
adequate disposal facilities without disrupting the order and harmony of the environment. The highway itself is lined with motels and souvenir shops, most of which are run by the owner whose living quarters are attached to the business. There is an inadequacy of parking spaces and support facilities for these commercial businesses. These established businesses must rely entirely upon the surrounding, existing facilities for recreational activities, with the exception of swimming pools that are usually located at all motels. The location of these facilities are such that traffic congestion is unavoidable during the peak season. The most powerful influence would be the Smokey Mountain National Park. With its worldwide advertisement this area has become one of the nation's most visited locations. In the Gatlinburg and Pigeon Forge area moonshiners operate openly at Homespun Mountaineer Village. There are other mountaineer exhibits and square dancing to country rhythm. At Gatlinburg the ski lift takes passengers from main street to Crockett Mountain. This is the focal point of the Blue Ridge Parkway through the Cherokee Indian Reservation. Exhibits of broom making, wood carving, glass blowing, and pottery are the main business interests.

The traffic situation is a difficult problem since air transportation terminates at Knoxville. There are no commercial airlines in the area of the project site. Therefore all movement is either by foot or vehicular, and
during late Fall traffic back-up is extremely annoying.

Since the T.V.A.* is in this area—with an office located in Sevierville, the project will be total electric. The South Central Bell Co. is in Pigeon Forge and will supply the project to the building line from where a private in-house system will be installed. There is no public sewer system for either sanitary or storm use. However, there are two flowing streams through the site that could be used as storm water disposers.

The soil consists of Gluitem Slate with traces of Limestone Conglomerate near the top. The surface topsoils vary from three feet to six feet. The subsurface consists of Knox Lolomite (Magnesian Limestone with Chert nodules). There is a slipage plane approximately 3.5 miles north of the project site.

The vegetation consists of pine trees that average 3" to 6" in diameter. The spacing of these trees is approximately 2' to 3'; this density is consistent on the west side of the project site. The east and south slopes have trees of 16" to 18" in diameter but the spacing is considerably larger and allows the growth of rhododendron which grow as wild flowers in this area. The level area between the slopes is covered with undergrowth and the few scattered trees are between 16" to 24" in diameter.

The total character of the area is developed around the homespun spirit of a carefree environment. There are

* Tennessee Valley Authority
enough old scattered log cabins along the various streams to psychologically place the tourist or at least stimulate him into trying to recapture the era of the past. One good example is the "Gold Rush Junction", a small community approximately three miles from the project site which is now owned by the Cleveland Browns, a well known football team. This is their training camp and after the visitors have watched the team, the newly constructed trade-center, ala Davey Crockett type, can be visited and purchasing of crafts is encouraged.
The people who visit this area are thrown into an atmosphere of festivity; this is the atmosphere every day, not just for the weekend. The people want this type of liveliness since it is a very welcome change from the "every day" routine. However the time span that the average tourist can participate without a change of pace is between two and three days. At this point there is a period of rest and relaxation usually needed. This is where the Mill Creek project will provide the option of a passive atmosphere as well as the hectic festive environment. By providing recreational facilities in-house the client will be able to retreat from the crowded sidewalks and still find that he can participate in certain types of activities or enjoy the natural environment that will be preserved for this very purpose.

The location outside of Gatlinburg provides this feeling of public - private time, enlarging the influence of Gatlinburg which might be considered throughout this area as the pulse of the Smokey Mountains. The financial benefit to the community should be a considerable sum since the existing shops will benefit and there will most definitely be additional shops incorporated into the project itself. Also there is the property tax that Sevierville County will
be gathering. Therefore it is reasonable to predict that the construction of this project, the only one of its kind in the area, will certainly be a significant feature of the city as well as an increase in the revenue of the Pigeon Forge community. Another aspect that will be of some benefit to the community is the fact that the inauguration of an in-house transportation system will definitely improve the highway conditions. However the actual positive value of the road conditions being bettered is rather doubted as this is one of the problems that is of major concern. Plans for future highways include a new interstate at the north edge of Pigeon Forge that will allow the through traffic to bypass the tourist routes.

The major concern in the project will be the weather. The site is a valley between two high ridges orientated north and south, located 36° latitude and 84° longitude. The following is the result of a twenty year survey:

**Temperature** - Average Summer temperature (degrees fahrenheit) June to August inclusive - proper Smokey Mountain area is 70° to 80°; South and southeastern areas of the Smokey Mountains is 40° to 50°. The average winter temperature (degrees Fahrenheit) December to February inclusive for proper Smokey Mountains and south and southeastern areas is 30° to 40°. The lowest temperature ever observed was -20° to -10°. The average annual minimum temperature
is 0° to 10°. The average annual number of days with temperatures continually below freezing is 5 to 15.

**Sunshine** - The average length of days: Shortest day - sunrise at 7:10, sunset at 4:50, duration of 9.36; Longest day - sunrise at 4:40, sunset at 7:20, duration of 14.40.

**Wind** - The average velocity of the wind during the year in miles per hour is 6 to 8. The prevailing direction of the surface winds:

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JULY       JANUARY
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**Frost** - The average dates of the last killing frost in the Spring are April 1 to April 30. The average dates of the last killing frost in the Fall are October 1 to October 31. The average number of days without a killing frost are 180 to 210 days.

**Snowfall** - The average annual snowfall in inches unmelted is from 20" to 40"; at the Smokey Mountain proper, 40" to 60". The average date of the first snowfall is from November 16 to December 1. The average annual number of days with snow cover are from 10 to 30 days. The average annual number of days
with snowfall of 1" or more (melted) is from 10 to 20 days.

Natural vegetation - Grassland and desert shrubs; Forest vegetation - Chestnut, Chestnut Oak, Yellow Poplar, Jack, Red, and White Pines.

Precipitation - The average annual precipitation in inches is from 50" to 60" with 40% to 60% falling from April to December. The average warm season precipitation in inches is from 20" to 28" with 40% to 50% falling from April to September. The average winter precipitation in inches is from 10" to 14" with 20% to 30% accumulating in December, January, and February. The average February precipitation in inches is 4" to 6" within 9 to 12 days. The average March precipitation is 6" to 10". The average spring precipitation is 14" to 20" with 20% to 30% falling in March, April, and May. The summer precipitation or June, July, and August is 10" to 14", 20% to 30% of the annual precipitation. The fall precipitation of September, October, and November is 6" to 8", greater than 20%.

The behavior of the snow is rather unique in that within four hours two feet of snow might fall, and within twenty-four hours it is usually melted. However the results are quite devastating; there is a long line of barns with collapsed roofs, and on the site itself there are two areas on
the slope that have had snow slides resulting in trees being broken off and smaller growth completely uprooted. This becomes an important consideration in the design since the sliding of the snow could damage a building as well. Therefore two choices are possible: either avoid these potential areas or design in a control device to eliminate the possible snow slide.
ECONOMICS OF THE AREA

Time affects economics in the respect that this will, in all probabilities, be a seasonal operation. One year's expenses and profit will have to be collected in 3/4 the time. Also the scheduling of construction is critical since all construction work must be co-ordinated between two extremes, the weather and the peak season of tourist trade. This indicates that there could be limited sizes to phasing since it would be advantageous for each phase to be completed in accordance with the two conditions listed above.

The surrounding area with respect to historical significance is the traditional log cabin with the still in the back yard; ala "The Lonesome Pine" theme. For the element of association with aspect, the client has expressed the desire to design with wood as the primary material. The area itself is very clannish; acceptance of an "outsider" is very slow and complete acceptance is very unlikely. Therefore most of the crafts are performed by native families and these crafts are available and exercised at a high commercial level. This could be a direct result since the area borders a very low income area of the Appalachian Mountains.

Since the late 40's the area has developed with an increasing awareness each year. This is definitely not the
best ski area around, however the people seem to visit more each year and the developer-builder has stopped at nothing to provide facilities for the visitors. As late as the early 1940's the main street of Gatlinburg was a gravel thoroughfare. So, for the last 30 years the area has experienced a very quick and pulsating growth with the tourist as the catalyst of this growth. The history is one of discovering that the Smokey Mountains are today one of the largest drawing attractions of the country. The potential of growth is rather a testimony to itself since this is one of the most rapidly developing areas. Even the mountain itself can't slow down the developers who are continuously cutting away at its structure. The only place that is not being overrun by this accelerated situation is the national park itself. The only features that have been constructed there are the highway and camping areas with view areas supplementing the highways.
FINANCING METHODS AND CONSIDERATIONS

The cost of this project will be supplied entirely by private funds. With the introduction of industrialized building systems a savings of 50% over conventional construction can be anticipated.* This percentage is based upon their product only, which would include wall, roof, and floor panels with interior and exterior bracing. The total project cost usually results in a 20% savings. The major concern will be the site preparation and actual on-site construction. Again due to the limited building season, because of peak season trade conditions, the initial cost will have to be evaluated to determine the actual scope involved with phasing the elements as to the number of units required to balance the resulting income. The total feasibility of the project is centered around the budget which is based upon a square foot cost of $25 to $30. However this may fluctuate depending upon the size of the units, both with respect to type, single, double, or efficiency, and style, middle income or executive. Therefore during the design development stage the preliminary cost estimate will provide a basis from which to make the decision as to square footage requirements. This cost is for the

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* Savings on the portion that is prefabricated - Twin State Preengineered Buildings
housing units only and the supplementary facilities will be an independent project with respect to financing only.

The projected annual cost is as follows:

- Occupancy percentage: 80%
- Land, Dept service, and taxes: $242,710
- Less land payments: $15,000
- Less depreciation: $75,672
- Less interest, first mortgage: $76,463
- Less interest, Chattels: $11,200
- Net taxable profit: $64,375

Cost data is from a proposal for a 100 room nationally franchised motel. The building cost is based on $9,000 per room which includes rooms, bar, restaurant, lobby, pool, parking areas, and landscaping. Land cost is not included in this figure.
ZONING

There is no local zoning regulations for the area of the project site. Therefore the state code will be the regulations that will be followed concerning the zoning of Mill Creek project.

The on-site zoning will be approached in accordance with environmental influences:

Function

Philosophy / idea / concept
Order / system
Sequence / happening
Linear vs. simultaneous expression
Product
Goal
Procedure / use / program
Plan / site / context
Simple vs. complex
Control vs. accident

Entry

Circulation through complex and into main flow of traffic.
Easily recognized but not dominating.
Accessible for exit and entry easily and quickly.
Large enough to carry emergency equipment; fire trucks and ambulances.
The on-site zoning will handled during the site analysis and definite zones or buffers will be established; however due to phasing certain areas may play a multi role until the entire project is completed.

At this time no information has been received as to the cities requirements for the supplying of city utilities. But there is conformation of the existence of water and power sources.
BUILDING FUNCTIONS

The room shall provide a dual function of which the primary being that of providing sleeping quarters, while the other is that of a temporary headquarters for the duration of the occupancy. The facilities therefore will be provided with a bed or beds, dressing facilities including dresser with drawer storage and a vanity table equipped with mirror, closet storage, luggage racks; seating area, with television, chairs (two), end tables and lamps, ashtrays, drinking glasses and ice containers; the bath will be furnished with tub and shower combination, stool, and lavatory, all provided in a package drop-in bath unit of fiberglass including walls, ceiling, and floor, electric switches, outlets and fixtures.

Kitchen unit - will consist either of a large space subdivided into functional areas or a series of adjoining rooms or suites of rooms. There will be three distinct areas: the sleeping area consisting of two beds providing facilities for four adults. In addition there will be provided a fold-out couch that will provide facilities for two additional adults or three children; thus there will be adequate facilities for
a minimum of one and a maximum of seven people.
Related to this sleeping area will be the bath and
dressing facilities similar to those described in
the preceding section. The second major area is the
sitting area. This area must provide a living /
family room atmosphere, incorporating the fold-out
couch, chairs, end tables and lamps, television,
ash trays, and game table (cards). The third area
will be a kitchen and dining facilities. The kitchen
will consist of a packaged kitchen unit consisting
of a sink, stove and refrigerator, storage cabinets
for cooking and eating utensials.

Restaurant - will serve two types of meals. One will be
the "conventional" type of meals and the second will
be a special Chinese dinner. The dining area will
have two areas: the main floor that will seat 150
and the balcony seating 30, the serving area for the
Chinese dinners. There will also be a seating area for
overflow dining trade that will benefit both the
people from the motel units and drive-in traffic.
The kitchen area for the dining will also be divided
into two preparation areas; one for the "conventional"
dining and the other for the Chinese food. The
waste will be handled through compactors and coolers
located in a central storage on the ground level.
Shopping - Gifts and crafts; facilities as required by individual craftsmen (workbench, counter, etc.)

First-aid - Health office with nurses desk, files, counter; two cots with division available, visitors' chairs (2)

Day-care center - Play facilities; multi-purpose; service facilities; mechanical facilities.

Administrative facilities and office - General office; work and storage area; director's office; conference room; public toilets; entry.
### AREAS REQUIRED

<table>
<thead>
<tr>
<th>Room or Area</th>
<th>Net Area</th>
<th>No. Occupancy &amp; Type of People</th>
</tr>
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<tbody>
<tr>
<td>Rooms</td>
<td>18 x 24 = 432</td>
<td>4 weekend trade</td>
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<tr>
<td>Kitchen unit</td>
<td>18 x 24 = 864</td>
<td>7 groups longer than weekend</td>
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<td>Restaurant*</td>
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<td>Reg. dining</td>
<td>2250</td>
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<td>Balcony</td>
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<td>80 all guests</td>
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<td>1500</td>
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<tr>
<td>Storage, receiving</td>
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<td>Employees for kitchen</td>
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<tr>
<td>Banquet hall and lodge</td>
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<tr>
<td>Shopping area</td>
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<td>300 all guests</td>
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<tr>
<td>gifts and crafts</td>
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<tr>
<td>First-aid</td>
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<tr>
<td>Day-care center</td>
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<tr>
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* Information from G.V. Aikman Co.; Kitchen and Cafeteria equipment.