UNDER THE SUN
AN AUTONOMOUS COMMUNITY FOR THE ELDERLY
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THESIS PROPOSAL

COLLEGE OF ARCHITECTURE & PLANNING
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ABSTRACT

THE ELDERY COMMUNITY FOR AN AUTONOMOUS SUN UNDER THE
ABSTRACT

"Under the Sun" is a thesis proposal for a facility to replace the phased out Elkhart County Home. Its purpose is two-fold. First, is to provide housing for the poor elderly who are financially unable to care for themselves. Secondly, is to create a center for the research in energy and food production. The community is to be autonomous in terms of a large portion of the food and energy needed to sustain the facility. All this is to be incorporated into an atmosphere which respects the elderly and helps them to live a fruitful life.

The proposal is broken down into many sections but they can be classified under three headings: analysis of the program and site; building design sequence; and building systems analysis. Each played an important role in developing the final proposal which is a direct response to the criteria which was developed at the projects conception.
UNDER THE SUN

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AN AUTONOMOUS COMMUNITY FOR THE ELDERLY UNDER THE SUN
SECTION ONE

Introduction

Section One is an introduction to this study and consists of: A brief history of this project and the reasons why it was chosen; The importance of the proposed facility; Some problems encountered in similar facilities which attempted to provide a solution, but failed: The project proposal, outlining the problem areas the solution is directed towards; and the goals which the solution hopefully will obtain.

PROJECT HISTORY

In Elkhart County, Indiana there exists a need for a facility to provide housing and care for the county's elderly poor. The facility which formerly provided this service, the Elkhart County Home, was phased out of operation and the residents were placed in private nursing homes throughout the county.

Phasing out the facility was a result of a controversy involving the County Council, who ordered the closing, and various groups of taxpayers who felt the facility was vitally needed. The main argument for the closing was the high cost of maintenance and rehabilitation of the existing building to meet standards required by the various governing organizations in terms of the building's performance. A study was conducted by a private architectural firm, at the county's request, to determine the different alternatives for the rehabilitation of the existing building, either alone or in conjunction with building additions, or for a completely new facility without the use of the existing building. Based on the study, including costs and future considerations, the Council decided that if the county was to continue providing this service a completely new facility would be required. The present facility cared for only 48 residents and based on the county's projected needs the new facility should provide for 120 residents.

The County Home provided for those elderly who were unable to provide for themselves financially. All users, at their time of admittance, were in good mental and physical health, and were ambulatory. The exact ratio of men to women fluctuated, but at the close of the present facility the average was 64 men and 68 women. All were capable of taking care of their own basic needs. Those who were not able were placed into a facility, elsewhere in the county, where their needs could better be met by specialization in the area of need. If after admittance to the County Home, residents became unable to care for themselves, they were transferred to one of the other separate facilities.

PROPOSAL

The function of the proposed county owned facility is two-fold. First, to provide housing for the aged of Elkhart County who are financially unable to care for themselves. Secondly, to operate this facility as a research and learning center for food and energy production. Both functions are to be incorporated into an autonomous community, whose description, specific functions and services, and solutions are described in this analysis.

AUTONOMY

The term "autonomous" has many meanings and applications. The context of it in this facility is reduced dependency on external sources of supply. There are three ways to achieve
reduced dependency. The most obvious is to reduce personal consumption by lowering standards of comfort, convenience and amenity. The second is to make better use of what is available, getting equal benefit from less input. For example, using fluorescent lights instead of incandescent lamps. The third way is to find alternative resources. For example, wind energy to drive a generator and produce electricity. Typically autonomous units utilize all three. Each has both technical and social aspects, although the social dominate the first category and the technical the last category. My major interest in autonomy will be directed toward the last two categories, with emphasis on alternative resources. The goal for the community is to be self-sufficient in terms of most of the food and power requirements. Not all of the food requirements will be able to be met by on site production but it is hoped that excess food can be produced to allow sales and then purchases of any product needed. It is also quite unlikely that all of the power will be produced on site. The goal here is to provide all of the buildings' heating and cooling demands, domestic hot water demands, and a portion of the electrical needs. With the present state of technology it is impracticable to produce and store electricity for future use, but production for immediate use and the excess transformed into useful heat is practicable. Alternative technologies to be employed are: active and passive solar energy, wind electrical generation, methane as a heat source and nutriculture as a form of food production.

The complex operation and integration of the various sub-systems within the community will be under the direct supervision of the research facility, while at the same time providing it with a fully operational center in which tests can be made and new forms of technology can be studied. The research personnel will be working in conjunction with a university or governmental agency concerned with problems and solutions to the dwindling natural resources.

The major emphasis on autonomy research has been in the area of autonomous houses. In these facilities the small scale of the required services is economically prohibitive from being developed into a sophisticated system. It is similar in that a large wind generator is more cost effective, per unit cost, than a few combined smaller ones of equal output because the output increases with the square of the blade diameter. But it would not be practical for an individual to develop a system which is larger than he needs just because the per unit cost is smaller, because the total cost would be prohibitive. This is why I feel providing for the needs of 120 persons instead of the usual one family of 3 or 4 will make the entire system more economical and allow greater sophistication.

Another major issue is the validity of the test data received from the small scale projects. By utilizing a large scale and control by qualified technicians from a research team a more valid type of information may be gathered. Also by having a full scale operation, new techniques can be researched and tested with valid test results. Another function will be to inform interested individuals or groups with direct exposure with a working system. By visiting the community and having personal contact, in the form of lectures, tours, and study sessions with the systems, a better understanding can be obtained. The research team is to function as the operations controller and the staff and residents will provide the labor force to perform routine duties.
ELDERLY HOUSING

A major flaw with the majority of the elderly housing projects built in the past is that their design is degrading to the residents. The facility is designed and managed as a dehumanized institution. Until recent years the elderly housing has been ignored and the aged were placed into institutional type facilities to be forgotten because they had outlived their useful years. That premise has been proven false, and as a matter of fact, when an individual is placed in an atmosphere where their capabilities are utilized, they continue to grow and contribute, and live a longer life being productive individuals.

This is the critical issue to which I plan to direct my solution. By involving the resident in the day to day operation of the community and giving each individual a responsibility, which they are capable of handling or even taxing their abilities at times, they can continue to live a fulfilling fruitful life. And when the time comes that they are no longer capable of contributing directly to the operation of the community, they will not be expelled and placed elsewhere, but will be provided for within the community atmosphere.

The above proposal seems to be a strong concept for the elderly housing problem in Elkhart County. The proposed community would be an excellent way to involve the residents in the operation, most of whom have a farming background. It would be a different concept in the area of housing and therefore would create interest from the outside communities, promoting interaction and the research accomplished would serve not only the community itself but also to aid others in their quest for a solution to dwindling resources.

DESIGN GOALS

Gerontological Design Goals

1. Increase opportunities for individual choice.
2. Minimize dependence and encourage personal independence.
3. Reinforce the level of competence, individual.
4. Compensate for sensory and perception changes.
5. Recognize decrease in physical mobility.
6. Improve comprehension and orientation.
7. Encourage social interaction.
8. Stimulate participation.
9. Provide for individual privacy.
10. Reduce distractions and conflicts.
11. Provide a safe environment.
12. Make activities and services available.
13. Improve public image of elderly.

Overall Community Design Goals

1. An atmosphere where the elderly can continue to grow, not stagnate.
2. Community which is autonomous in terms of most of the food and energy requirements.
3. Facility which acts as a teaching tool for interested groups who are concerned with the dwindling natural resources and the solutions to the problem.
4. Facility which can advance the state of the art, testing new techniques and receiving valid test data.
5. Facility which is a strong response to the criteria shaping it.
SITE

The site chosen for this proposal is the present site of the now vacated Elkhart County Home. The buildings on the site are in an advanced state of disrepair, and it is doubtful if they could be used for a county home facility. This decision was made by the county on the basis of their study, but they also felt another function might not require such extensive renovation. What that new function might be, the county is still unsure. Therefore, for the purpose of this project it is proposed the buildings be removed and a new facility placed there.

The site is located in the north central portion of Elkhart County, Indiana. Elkhart County is approximately in the center of the northern part of Indiana, and bordering the state of Michigan. The site is centrally located in the population center of the county, one mile east of Elkhart and nine miles west of Goshen with basically a rural setting. It is directly adjacent to County Road 45, approximately 200 feet north of U. S. Highway 33 and the Con-Rail Railroad tracks, all three of which run parallel to each other between Elkhart and Goshen and south of the site. The site is bordered on the north and east sides by the heavily vegetated banks of the Elkhart River, and on the west by Ox Bow County Park, a 200-300 acre county owned park. This main site consists of approximately 35 acres. In conjunction to the main site is a sub-site of approximately 40 acres located one-half mile east on the south side of U. S. Highway 33.
Program

The Elderly Community for Autonomous Sun Under
SECTION TWO

Introduction

After establishing that there is a need for the proposed facility, the problems to be solved and the goals to be met, the next step is to establish the parameters of the project. These parameters are established from three separate analyses: First, the building program, with a qualitative and quantitative analysis of the facilities requirements; Secondly, an analysis of the site, from a macro scale to a micro scale, showing the site advantages and disadvantages; and Thirdly, the building type study, which is an analysis of past projects similar to the proposed facility. The Fourth element of this section is a synopsis, outlining the major issues drawn from the three analyses.

PROGRAM

The facility is divided into six areas of service and each of their functional and space requirements will be discussed separately in the following analysis:

1. Elderly Residential Housing
2. Life Care Center
3. Research Center
4. Life Support Center
5. Core Facilities
6. Administrative and staff Residential

ELDERLY RESIDENTIAL HOUSING

It is assumed that the resident's physical and mental condition is as good as in the case of an older person living on their own. However, the design and management of the facility should encourage the resident's independence and approach the ideal of living on their own. The facility should offer the maximum possible freedom to its residents, ranging from the ability to come and go as they please, to the furnishings of their rooms.

An important aspect of home life is the possibility of establishing social contacts, whereby the occupants can form a community of their own free will. Most facilities overlook this aspect of their services and thereby become merely storage bins in which the elderly sit out the rest of their days in isolation. Such opportunities are presented by allowing the residents to have their meals together, by enabling them to make use of communal rooms, recreation facilities, etc., and by seeking and encouraging their participation in the running of the community.

By going one step further and allowing and encouraging those residents who are so inclined, to even do some work within the community, the facility would be making it possible for the residents to make themselves useful. With this type of program, taking place not in an atmosphere of compulsion, but in one of voluntary cooperation, the psychological benefits would be multiple.

The following items should be available to each resident in the room: a single bed and a closet for clothes. Each room must have a lavatory. Other items of furniture and decor should be left to the discretion and taste of the residents with a minimal amount of supervision.

A toilet in each room offers the residents greater privacy and they need not leave their rooms during the night, while difficulties between occupants, which sometimes occur over the
use of common toilets, are avoided. Also it
should be realized that the standard of hous-
ing is rising in general, and in the future
there will be greater preference, even a de-
mand, for private toilets. The same reasoning
holds true for bathing facilities. Therefore,
it has been decided to provide each residen-
tial living unit with its own private toilet
and bathing facility.

Storage facility is needed for clean and
soiled linen, cleaning and janitorial supplies,
and wheelchairs.

The common spaces should provide an atmosphere
for socializing with other members of the
community on a small scale. The area should
have a focal point and easy access to the
exterior and to the main lobby core area
while still having visual and acoustical
separation.

**Space Requirements**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Single Residential Units</td>
<td></td>
</tr>
<tr>
<td>100 Units @ 390 SF/Unit</td>
<td>39,000 SF</td>
</tr>
<tr>
<td>Double Residential Units</td>
<td></td>
</tr>
<tr>
<td>20 Units @ 590 SF/Unit</td>
<td>11,800</td>
</tr>
<tr>
<td>Communal Space</td>
<td>2,000</td>
</tr>
<tr>
<td>Storage</td>
<td>1,500</td>
</tr>
<tr>
<td>Custodial</td>
<td>500</td>
</tr>
<tr>
<td>Circulation @ 20%</td>
<td>64,800</td>
</tr>
<tr>
<td>Total</td>
<td>65,760 SF</td>
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</tbody>
</table>

**LIFE CARE CENTER**

The Life Care Center is a small sub-center of
the community and will have to respond to three
types of residents:

1. Bed patients in the process of rehabili-
tation
2. Ambulatory and semi-ambulatory patients
3. Permanent Bed Patients

The atmosphere of the LCC must be cheerful and
homelike, and have a stimulating effect on the
residents. The atmosphere must be achieved by
location and the equipment and furnishings, as well
as by the attitude of the staff. A major design
goal for this area is to provide all of the
needed services without isolating the inhabi-
tants from the rest of the community. Basic
care needs should be done by other residents of
the community, not nursing staff alone, bene-
fiting both.

Physical and occupational therapy should be
available not only to the residents of the LCC
but also to the residents of the community on
an outpatient basis.

A well thought out and scientifically super-
visied diet program plays an important role in
the recovery of patients, and a dietitian
should be included on the staff.

Because of the difficulty involved in level
changes, the community should be, as much as
possible, on one level.

Patient rooms should have a clear, unobstructed
view of a pleasant nature. East, south or west
exposures should be provided to patient rooms
so the sun will be part of the room at least a
portion of the day. Care must be exercised with regard to the intensity of the sunlight with south and west exposures.

The following should be available for each patient in the room: a single bed, a bedside table, a chair, and a closet with both a hanging area and shelving area. Each room should also have a small table with one or two easy chairs.

With this category of residents, it is especially important that the dull hospital atmosphere be avoided. This should be a consideration not only in the design of the rooms and building, but also when choosing the colors of the rooms, the decor items, the lighting fixtures, etc.

In the LCC each pair of two bedrooms will share a toilet and lavatory and use common and supervised bathing facilities. The use of wheelchairs will be common and all bathing and toilet areas should be designed with this in mind. Some patients will need to be assisted with these activities.

Two bath tubs should be provided for the LCC area. They should be free standing and steps available to enable residents to get into and out of the tub more easily.

A number of shower-baths should be provided in the LCC in the same area as the tubs. The bathing area should also contain a lavatory, a footbath, footstool, clothes hooks and storage for towels and bathing supplies.

A separate dining room will not be provided in the LCC because part of the patients will be having their meals in bed. Ambulatory patients will eat in the main dining room with the other residents of the community.

The LCC, as the residential housing units, should have a couple small living rooms for the patients to gather for conversation, socializing, or just to pass the time of day. Provisions should be made for the residents in wheelchairs. The living rooms should be a place that encourages interaction by being an inviting place for the residents to spend their spare time. There should be ample exposure and access to the exterior.

The nursing station should have an area for keeping records and doing administrative work. The nurse's station should also contain a sink, a medicine cabinet and a refrigerator for medicines, and an instrument cabinet. The call systems indicator board and other communication terminals should be located here.

Associated with the nurse's station should be a clean linen room, a soiled linen room, medical examination rooms and a locker and lounge facility for the nurses.

Also included in this area should be the doctor's office, a library, conference room and pharmacy facilities to serve not only the patients of the LCC but also for the use of the community.

**Space Requirements**

<table>
<thead>
<tr>
<th>Category</th>
<th>Units</th>
<th>Size (SF/Unit)</th>
<th>Total Area (SF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Single Rooms</td>
<td>10</td>
<td>150</td>
<td>1,500</td>
</tr>
<tr>
<td>Patient Double Rooms</td>
<td>20</td>
<td>240</td>
<td>4,800</td>
</tr>
<tr>
<td>Day Rooms</td>
<td>2</td>
<td>200</td>
<td>400</td>
</tr>
<tr>
<td>Nurse Station</td>
<td></td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>Nurse Office</td>
<td></td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>Examinations Rooms</td>
<td>5</td>
<td>150</td>
<td>750</td>
</tr>
<tr>
<td>Physical Therapy</td>
<td>300 SF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>---------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pharmacy</td>
<td>150</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nurse Workroom - 2 @ 100 SF/Unit</td>
<td>200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assisted Bathing - 4 @ 120 SF/Unit</td>
<td>480</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nurse Lounge</td>
<td>150</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctor Office</td>
<td>150</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctor Conference</td>
<td>150</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library</td>
<td>150</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nurse Lockers</td>
<td>200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entry/Waiting</td>
<td>600</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Circulation @ 20%</strong></td>
<td>10,250</td>
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<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>12,300  SF</td>
<td></td>
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</tr>
</tbody>
</table>

**LIFE SUPPORT CENTER**

This is a broad functional center composed of all the facilities dealing with food, power and heat production and waste disposal.

The main agricultural area will need to be partially separated from the main building mass to assure proper circulation and to provide working areas of ample size. Involved in this area is the dairy cattle, beef cattle, hog and poultry housing and feeding facilities, as well as the food storage and processing and waste handling facilities for the animals. This area may require its own separate life support system to assure that the odor or other unhealthy aspects are not transferred to the other areas of the community. This area should definitely be vented.

The center also includes all areas of energy and heat production and storage, which may prove to be extensive and may need to be distributed throughout the community. Typical production facilities and storage compartments will be provided for heat, electricity and methane, along with an area for wood storage which is to be used as a primary auxiliary source of heat. The county park system has assured that a large quantity of wood could be made available to the community.

A third area, and one of major importance, is the facility for food production by means of either hydroponics or nutriculture and the auxiliary
control center. In this area it will be important to maintain a high degree of environmental consistancy. This area will require a careful monitoring by the research team to assure the proper environment and growing conditions.

The life support center needs to have direct access from the research center as well as to the food processing and storage areas. Access for the residents to the growing area is also of prime importance.

Space Requirements

Growing Area - 250 SF/Resident
Served - 150 Persons, Approx. 37,500 SF
Control Systems Area @ 10% 3,750
Mechanical Systems Areas 12,000
Hog Barn 2,500
Poultry House 1,500
Dairy Barn 1,700
Milking Parlor 300
Milk Storage 200
Feeding Area - Cattle 500
Cattle Barn 3,000
Meat Processing 600
Methane Digestor Area 500

Circulation @ 20% 15,810

Total 76,860

+ Mechanical Machinery Storage and Repair

CORE SPACE

This core consists of all the public areas, recreational and dining areas, food preparation facilities and administrative areas.

The common rooms are the core of any congregate living. If a facility for the elderly is to be a "home" it must be one in which the residents are part of the communal society, although each remains at all times an individual personality. The privacy of the resident's room permits the resident to maintain his individuality, the communal room allows the resident to share ideas and experiences with others.

The communal rooms fall into two catagories: The main areas within the Central Core, and the smaller communal rooms associated with the various living units. The main communal room should be located near the main entrance, but not part of the public lobby. The need for small groups and private conversations should be recognized. Residents should be able to talk to friends and relatives without having to move furniture from one part of the room to another.

The main activities room can also be used by larger groups for various purposes, such as: films, concerts, dances, plays and parties. Another main activity which will occur in the activities room will be presentations to the public about the working systems of the community. Also it is hoped that classes taught by the resident could be taught to members of the outside community on such subjects as quilting, gardening, etc. A pantry should be located adjacent to the space to facilitate the serving of refreshments and to encourage volunteer organizations to participate in the programs.

The residential dining room may consist of one large space, more flexible, or it may be a series of smaller spaces, more of a human scale. However the flexibility of the space should be considered. The dining area should be centrally located to the kitchen, and more than enough space to avoid crowding. It is desirable not to
have more than four people to a table, with provisions for individual tables for couples. The serving of the food will be cafeteria style with staff members available to assist the residents to their tables, and the staff will then act to clear the table when the meal is finished.

The atmosphere of the dining area should make for pleasurable dining. Soundproofing is necessary to reduce the noise of conversation, the clatter of dishes and cutlery, and the normal commotion of service. If possible the dining room should have a pleasant view.

The arrangement of tables should allow for wheelchair and crutch walkers. A parking stand for crutches and canes will obviate the need for hanging them on the backs of chairs or placing them under the table.

The food preparation facilities consist of all areas from storage of raw plant material harvested from the growing area, the processing and storage of the plant material, either canned or frozen, and the kitchen facilities that eventually process the food for consumption. Also included in this area are facilities for the butchering of the meat grown in the agricultural center, its storage and processing. Other auxiliary areas include general storage, dishwashing, receiving, laundry, custodial facilities and waste removal.

The Administrative area consists of a receptionist area, bookkeeping and general filing space, an office for the administrator and his assistant along with a secretarial space to serve both. There should also be a small waiting area. It is hoped that the administrator and the assistant will spend a large portion of their time out in the community instead of isolated in their offices.

### Space Requirements

<table>
<thead>
<tr>
<th>Room</th>
<th>Sq Ft</th>
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<tbody>
<tr>
<td>Recreation Room</td>
<td>1,500</td>
</tr>
<tr>
<td>Storage</td>
<td>200</td>
</tr>
<tr>
<td>Activities Room</td>
<td>1,500</td>
</tr>
<tr>
<td>Pantry</td>
<td>500</td>
</tr>
<tr>
<td>Storage</td>
<td>500</td>
</tr>
<tr>
<td>Library</td>
<td>600</td>
</tr>
<tr>
<td>Lobby w/RR and storage</td>
<td>1,200</td>
</tr>
<tr>
<td>Food Processing Area:</td>
<td></td>
</tr>
<tr>
<td>Raw Storage</td>
<td>500</td>
</tr>
<tr>
<td>Processing</td>
<td>800</td>
</tr>
<tr>
<td>Waste Storage</td>
<td>200</td>
</tr>
<tr>
<td>Final Storage</td>
<td>1,000</td>
</tr>
<tr>
<td>Meat Processing Area:</td>
<td></td>
</tr>
<tr>
<td>Preliminary Storage (Cold)</td>
<td>300</td>
</tr>
<tr>
<td>Processing</td>
<td>500</td>
</tr>
<tr>
<td>Waste Storage</td>
<td>100</td>
</tr>
<tr>
<td>Final Storage</td>
<td>800</td>
</tr>
<tr>
<td>Food Preparation Area:</td>
<td></td>
</tr>
<tr>
<td>Preliminary Preparation Area</td>
<td>500</td>
</tr>
<tr>
<td>Final Preparation Area</td>
<td>600</td>
</tr>
<tr>
<td>Bakery</td>
<td>300</td>
</tr>
<tr>
<td>Dietitian Office</td>
<td>150</td>
</tr>
<tr>
<td>Dry Goods Storage</td>
<td>1,500</td>
</tr>
<tr>
<td>Dishwashing</td>
<td>500</td>
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<td>Dish Storage</td>
<td>200</td>
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<tr>
<td>Food Serving Area</td>
<td>500</td>
</tr>
<tr>
<td>Resident Dining Area</td>
<td>1,100</td>
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<tr>
<td>Table &amp; Chair Storage</td>
<td>300</td>
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### Space Requirements (cont.)

<table>
<thead>
<tr>
<th>Administration:</th>
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<tbody>
<tr>
<td>Receptionist</td>
<td>150 SF</td>
</tr>
<tr>
<td>Bookkeeping - Filing</td>
<td>300</td>
</tr>
<tr>
<td>Waiting</td>
<td>150</td>
</tr>
<tr>
<td>Administrator's Office w/Conference</td>
<td>300</td>
</tr>
<tr>
<td>Asst. Admin. Office</td>
<td>150</td>
</tr>
<tr>
<td>Secretary</td>
<td>150</td>
</tr>
<tr>
<td>RR &amp; Lounge</td>
<td>200</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Auxiliary Areas:</th>
<th></th>
</tr>
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<tbody>
<tr>
<td>Receiving</td>
<td>500</td>
</tr>
<tr>
<td>Building Storage (general)</td>
<td>1,500</td>
</tr>
<tr>
<td>Laundry</td>
<td>800</td>
</tr>
<tr>
<td>Employee Locker</td>
<td>400</td>
</tr>
<tr>
<td>Maintenance Office</td>
<td>150</td>
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</tbody>
</table>

| Circulation @ 20%                              | 4,120 |

| Total                                          | 24,720 SF |

### Space Requirements

<table>
<thead>
<tr>
<th>Administrator's Housing:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Living/Dining</td>
<td>450 SF</td>
</tr>
<tr>
<td>Kitchen</td>
<td>150</td>
</tr>
<tr>
<td>Master Bedroom</td>
<td>200</td>
</tr>
<tr>
<td>Bedroom</td>
<td>170</td>
</tr>
<tr>
<td>Bath (1 1/2)</td>
<td>100</td>
</tr>
<tr>
<td>Storage</td>
<td>200</td>
</tr>
<tr>
<td>Utility</td>
<td>150</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Staff Housing:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Living/Dining</td>
<td>500</td>
</tr>
<tr>
<td>Kitchen</td>
<td>150</td>
</tr>
<tr>
<td>Bedroom (4)</td>
<td>800</td>
</tr>
<tr>
<td>Storage</td>
<td>300</td>
</tr>
<tr>
<td>Library</td>
<td>150</td>
</tr>
<tr>
<td>Bath (4)</td>
<td>320</td>
</tr>
</tbody>
</table>

| Mechanical (Both units A & S)                  | 200   |
| Garage                                        | 800   |

| Total                                          | 4,640 SF |

**Administrative and Staff Housing**

This facility is to serve as housing and basic living facilities for the Administrator and his family, and for the permanent 24 hour staff of the community. Although the facility is part of the community, it may need to be separated from the main buildings of the community to provide the privacy and personal lives of the staff. More research needs to be conducted to prove that this is the most advantageous for both the community residents and the staff. It may be that the best solution would be for the Administrator and his family and staff to obtain their own separate housing off site.
## Community Total Programmed Area Summary

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Elderly Residential Housing</td>
<td>65,700 SF</td>
</tr>
<tr>
<td>Life Care Center</td>
<td>12,300</td>
</tr>
<tr>
<td>Research Center</td>
<td>2,544</td>
</tr>
<tr>
<td>Life Support Center</td>
<td>76,860</td>
</tr>
<tr>
<td>Core Space</td>
<td>24,720</td>
</tr>
<tr>
<td>Residential &amp; Staff Housing</td>
<td>4,640</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>186,764 SF</strong></td>
</tr>
</tbody>
</table>

## On Site

<table>
<thead>
<tr>
<th>Parking:</th>
<th>Barnyard &amp; service area for:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visitors:</td>
<td></td>
</tr>
<tr>
<td>40 Cars</td>
<td>Dairy Cattle 15</td>
</tr>
<tr>
<td>2 Busses</td>
<td>Beef Cattle 35</td>
</tr>
<tr>
<td>20 Cars</td>
<td>Hogs 35</td>
</tr>
<tr>
<td>Staff</td>
<td>Laying Hens 40</td>
</tr>
<tr>
<td></td>
<td>Poultry Chickens 40</td>
</tr>
</tbody>
</table>
3. Bull Dung Type Study

The Elderly Community for Autonomous Sun Under
BUILDING TYPE STUDY

The purpose of this analysis is to achieve a direct comparison and general understanding of several similar facilities related to the thesis proposal: "An Autonomous Community For The Elderly".

There were no examples available of elderly facilities which were in any way autonomous. In fact, it was difficult to find sufficient information of examples of elderly housing facilities which were worthy of examination. The four examples chosen for analysis are facilities which have proven themselves as valid solutions.

Each facility has similar qualities present in the other examples, along with qualities unique to itself, some of which are good and some are bad. The format of this analysis is primarily a visual comparison, supplemented by a written analysis.

A collective analysis of the four examples provides an overview of the qualities which exist in the majority. This is preceded by the individual analysis, stating qualities which are unique to that facility.

The individual analysis is divided visually into three categories utilizing the limited amount of information available. First, the building's enclosure form; Secondly, the circulation areas; and Thirdly, the space zoning within the facility.

The qualities present in these facilities are not to be considered as the only qualities desirable. Nor are they all to be considered the major qualities. These are not finite solutions. This analysis is to be used as a tool to develop a unique solution to the problem at hand, as described in the project proposal.

MAJOR COMMONALITIES

Single Living Quarters With Private Bath
Extensive Corridor Area
Personal Exterior Spaces
Large Common Space With Ancillary More Private Common Areas
One Main, Centrally Located Entry
Large Common Dining and Food Preparation Areas
Small Service Area Versus Living Area Ratio
Centrally Located Service Areas
Multi-Level Residential Areas
Nursing/Care Center Provided
Courtyard Created By Building Configuration
SPACE ZONING KEY

- **PRIVATE**
- **COMMON**
- **SERVICE**

Extensive Circulation Area
Large Common Room
Rigid Residential Area
SPACE ZONING KEY

- PRIVATE
- COMMON
- SERVICE

Small Circulation Area
Rigid Residential Area
Lack of Exterior Space
Large Common Area
Common Separated From Residential By Service Area

Minimum Service Area

Broken Geometry

Articulated Enclosure
SPACE ZONING KEY

- Private
- Common
- Service

Minimum Circulation Area

Corridors Broken By Geometry and Exterior Walls

Single Loaded Corridors.

Addition & Community Center Adds Vitality and Versatility To The Facility
A community for autonomous Sun Under the elderly
Existing built forms
EXISTING BUILDING ANALYSIS

The present facility has been inspected by the State Board of Health, State Fire Marshal, State Administrative Building Council and members of the K/M design team who conducted a thorough inspection of the facility prior to their evaluation and subsequent design proposal for a new facility to replace the old. Following, in general, are what can be considered as code violations.

ARCHITECTURAL

All four stairways have less than the required 44" minimum width and are not enclosed with one hour fire rated walls.

Under existing conditions, exterior fire escapes are accepted, but adjacent windows should have wire glass. If renovation is done then the existing fire stairs will be unacceptable.

On the second floor, north side, the dead end corridor is beyond the 25' minimum allowable - two corridors are less than the required 40' minimum allowed in width.

South end of basement has no approved means of egress - stair violated code in width and encroachment and the corridor does not meet minimum headroom height.

The main entry stair does not have the required intermediate landing.

There is no horizontal access to the main floor of the building as required for the handicapped persons.

Resident rooms should be lockable only from the corridor side and should be of solid core con-

struction. Transoms above the doors should have a one hour fire rating.

Fire doors must have electromagnetic devices and be manually operable from both sides.

All exterior doors must have panic hardware and swing in the direction of egress. Screened doors should be removed.

Draperies must be rated flame retardant.

Floor coverings must meet flame spread requirements.

Loose plaster presents a safety hazard. Holes should be sealed.

Exterior windows are not all operable and typically are deteriorated enough to present safety hazards.

Handicapped toilets and bathing facilities must be provided.

Health code requirements require selected furnishings and storage areas to be approved. Separate storage should be provided for clothing.

Selected equipment in the kitchen does not meet health codes.

Openings to the attic should be screened.

HEATING AND VENTILATING

Toilet rooms and kitchen equipment are not exhausted as required.

There is no provision for make-up fresh air.
PLUMBING

The fire hose standpipe system does not have all the required 1 1/2" hoses in place. The system has not been tested and dated.

An anti-scald device is required to control domestic hot water temperature.

Selected pieces of porcelain plumbing fixtures do not meet health standards.

Urinals must be provided for men.

Health code requires janitor sinks to be provided on each floor.

ELECTRICAL

Corridors do not have adequate emergency lighting.

Illumination levels do not meet minimum code standards in corridors, stairways, toilets and kitchen areas.

Electrical switching is partially corroded.

Electrical systems and equipment are not grounded as required.

Electrical insulation is brittle and occasionally missing.

Exterior light fixtures are in hazardous condition nor do they comply with minimum code.

Much of the electrical equipment is cord connected and does not comply with code.

The fire alarm wiring is exposed and should be concealed in conduit. An emergency power supply to this system should be provided.

Separate main electrical services must be combined into one system.

STRUCTURAL

Some roof rafters and sheathing have rotted and will rapidly pose a safety hazard.

Some of the exterior brick masonry wall has severe weather damage, some brick has fallen away from the exterior side and will soon pose a safety hazard.
THE ELDERLY
COMMUNITY FOR
AN AUTONOMOUS
SUN
UNDER
THE
Bristol. A broad sandy outwash plain is located north of Elkhart and Bristol and dune topography is evident. Broad outwash plains occur along the Saint Joseph, Elkhart and Little Elkhart rivers and Turkey and Solomon creeks.

Much of this area is dry from coarse soil material and the resulting low available moisture capacity. Extensive deposits of sand and gravel occur in these outwash areas.

Extensive muck areas, some of which are still undrained, are adjacent to the lakes, rivers, along minor drainage ways and in numerous potholes.

PLANT AND ANIMAL LIFE

Plants have been the principal living organism that influenced the formation of the soils in Elkhart County but micro-organisms, earthworms and other forms of life have contributed to the morphology. Bacteria and fungi are micro-organisms that affect the soil. They cause plants to decompose into humus and to be incorporated into the soil. High plants such as trees, legumes and grasses use plant nutrient from the lower layers of the soil and return nutrients to the upper layers of the soil in the form of leaf and grass litter.

The main native vegetation in the county consists of deciduous hardwood forests, prairie grasses and sedges. In addition there are a few water tolerant trees.

Soils are greatly affected by the type of vegetation under which they formed. Grasses have a large, fibrous root system and, together with the top growth, add a lot of organic matter to the soil each year. Therefore, soil formed under forest have a thin, light-colored surface layer because the organic matter was derived principally from leaves deposited mostly on the surface of the soil.

Organisms are important in decomposing the large amount of organic matter that accumulates on the surface each year. This disintegration, decomposition and incorporation of organic matter into soil are largely affected by the organisms that live in the soil. The species of organisms that are in the soil vary with such factors as climate, physical and chemical properties of the soil, and the type of vegetation. These organisms influence the type of humus layer, soil profile development and physio-chemical properties of the soil. An intimate relationship exists between life in the soil and vegetation cover that the land supports. Consequently, organisms, both plants and animals, have played an important part and contribute to the differences among the soils in the county.

PROPOSED COMMUNITY SITE PHYSIOGRAPHY

Information received from the U. S. Department of Agriculture, Soil Conservation Service, shows that almost 100% of the site consists of Oshtemo Loamy Sand with 0% to 2% slopes on a majority of the site. Oshtemo Loamy Sand (OsA)

Oshtemo Loamy Sand is described as moderately deep and deep, moderately well and well to excessively drained, sandy-textured, moderately rapid, permeable outwash timber and prairie soils. These soils have a limited moisture supplying capacity and drought is a major hazard.

The soil has been analyzed and found free of limitations or with limitations that are easy to overcome. It has been approved for any of the
GENERAL COUNTY CHARACTERISTIC

Elkhart County is located in the extreme north-central portion of the state and encompasses 468 square miles. It has a population of 126,529 as of 1970. The Saint Joseph and Little Elkhart rivers cross the county.

The county is heavily orientated around the agricultural and mobile home/recreational vehicle industries.

The county has airports serving Nappanee, Goshen and Elkhart. The county is served by two railroads, the Wabash Railroad across the southern portion of the county and the Con-Rail Railroad system, formerly the Penn Central, through the central, northeast and northwest area. There is no passenger service provided. Bus transportation to other population centers is only provided by Indiana Motor Bus Company.

The major highways in the county are:

Indiana Toll Road (Interstate 80/90)
U. S. Highway 20
U. S. Highway 33
U. S. Highway 6
Indiana Highway 13/313
Indiana Highway 15
Indiana Highway 19

COUNTY CLIMATE

Elkhart County has a temperate, humid continental climate that is essentially uniform over the county. The mean annual precipitation is about 36". It is fairly well distributed throughout the year; only slightly greater amounts occur in the spring. The monthly mean temperature is about 49° F and there are wide variations in temperature from winter to summer.

Climate influences the soils in the county largely through moderately heavy amounts of precipitation. The rain and melting snow slowly seep down through the soil. This percolating water causes physical and chemical changes; physically, it removes the clay particles from the surface layer and translocates them to the subsoil. This accumulation of clay in the subsoil is characteristic of most soils in the county. Chemically, the percolation water dissolves minerals and moves them through the soil. As a result of this leaching, the free calcium carbonate has been removed from the surface layer and subsoil of most soils. Consequently, the soil is medium acid to strongly acid in the surface layers unless they have been limed.

The soils are frozen 3 to 4 months in winter. During this period the soil-forming factors are largely dormant, except for some thawing and freezing action.

Climate indirectly influences the formation of soil by stimulating the growth of living organisms, especially vegetation. The climate of Elkhart County is conducive to the growth of hardwood forests, which directly influence the formation of soils classified as Alfisols.

COUNTY PHYSIOGRAPHY

The upland soils of the county developed mainly in loam and light clay loam glacial till except for an area immediately north of Millersburg which consists of silty clay loam till.

The outwash soils developed in loamy outwash loose over sand and gravel. Hills and ridges of sand are common west of Middlebury and south of
following uses: residential, commercial, industrial, septic tank and absorption fields, local roads and streets, picnic areas, parks and play areas, bridle paths, and nature and hiking trails.

The site was also analyzed for agricultural use with the following classification: III-2. This classification has the following description: Class III land is also good cropland but has severe hazards that will require careful soil management, including special conservation practices. The hazards may limit the intensity and choice of cultivated crops.
The management needed to yields in the Column A consist of:

- Using cropping systems that maintain tilth and organic matter.
- Using management practices that reduce erosion sufficiently so that the qualities of the land are not reduced.
- Using moderate applications of fertilizers and lime as determined by soil tests.
- Returning most crop residue to the soil.
- Using plowing and tillage conventional methods.
- Using crop varieties generally adapted to the climate and soils.
- Controlling weeds moderately well by tillage and spraying.
- Draining wet land sufficiently well for cropping.

The management needed to yields in the Column B consist of:

- Using cropping systems that maintain tilth and organic matter.
- Using the cultural practices, mechanical practices, or both that are needed to control erosion, so that the qualities of the land are maintained or improved instead of reduced.
- Maintaining high level of available phosphate, potassium and nitrogen as determined frequently by soil tests and according to recommendations by the State Agricultural Experimental Station.
- Liming the soil as indicated by tests and according to recommendations.
- Using crop residues to the fullest extent for protection and improvement of the soil.
- Practicing minimum tillage.
- Using only the best adapted variety of crops.
- Thoroughly controlling weeds by spraying and weeding.
- Adequately draining wet soils.

### Table: Predicted Yields

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
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<tbody>
<tr>
<td>Corn</td>
<td>60 Bushels</td>
<td>75 Bushels</td>
</tr>
<tr>
<td>Soybeans</td>
<td>20</td>
<td>24</td>
</tr>
<tr>
<td>Wheat</td>
<td>25</td>
<td>30</td>
</tr>
<tr>
<td>Oats</td>
<td>50</td>
<td>60</td>
</tr>
<tr>
<td>Clover Grass</td>
<td>1.2</td>
<td>1.5</td>
</tr>
<tr>
<td>Alfalfa</td>
<td>2.5</td>
<td>3.0</td>
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<tr>
<td>Property</td>
<td>Value</td>
<td></td>
</tr>
<tr>
<td>------------------------------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>Permeability</td>
<td>6.30 - 20.0</td>
<td></td>
</tr>
<tr>
<td>Available Moisture Capacity</td>
<td>0.06 - 0.08</td>
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</tr>
<tr>
<td>Frost Heave Potential</td>
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<td></td>
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<tr>
<td>Shrink/Swell</td>
<td>Low</td>
<td></td>
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<tr>
<td>WEATHER DATA MONTHLY</td>
<td>JAN</td>
<td>FEB</td>
</tr>
<tr>
<td>----------------------</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>AVERAGE TEMPERATURE (°F)</td>
<td>28</td>
<td>30</td>
</tr>
<tr>
<td>MEAN NUMBER DAYS ABOVE 90°F</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>MEAN NUMBER DAYS BELOW 30°F</td>
<td>29</td>
<td>26</td>
</tr>
<tr>
<td>MEAN TOTAL PRECIPITATION (in)</td>
<td>2.5</td>
<td>2.0</td>
</tr>
<tr>
<td>MEAN TOTAL SNOWFALL (in)</td>
<td>9.0</td>
<td>8.5</td>
</tr>
<tr>
<td>MEAN DEW POINT TEMPERATURE (°F)</td>
<td>20</td>
<td>22</td>
</tr>
<tr>
<td>MEAN RELATIVE HUMIDITY (%)</td>
<td>80</td>
<td>77</td>
</tr>
<tr>
<td>MEAN POSSIBLE % SUNSHINE</td>
<td>36</td>
<td>44</td>
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<tr>
<td>MEAN NUMBER HOURS SUNSHINE</td>
<td>126</td>
<td>142</td>
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<tr>
<td>MEAN SKYCOVER SRise - SSET (%)</td>
<td>80</td>
<td>72</td>
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<tr>
<td>MEAN WIND SPEED DIRECTION (mph)</td>
<td>12</td>
<td>12</td>
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<tr>
<td>NUMBER DEGREE DAYS 65° BASE</td>
<td>1221</td>
<td>1071</td>
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<td>INSOLATION LANGLEYS BTU°s</td>
<td>150</td>
<td>230</td>
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<td></td>
<td>555</td>
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YEARLY WEATHER DATA ANALYSIS

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<th>Description</th>
<th>Value</th>
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<tr>
<td>Mean Date of Last 32°F (Spring)</td>
<td>May 3</td>
</tr>
<tr>
<td>Mean Date of First 32°F (Autumn)</td>
<td>Oct 16</td>
</tr>
<tr>
<td>Number of Freeze-Free Days</td>
<td>165</td>
</tr>
<tr>
<td>Normal Annual Precipitation</td>
<td>36</td>
</tr>
<tr>
<td>Mean Annual Normal Precipitation in Millions of Gallons per Square Mile</td>
<td>600</td>
</tr>
<tr>
<td>Mean Annual Snowfall</td>
<td>60</td>
</tr>
<tr>
<td>Mean Annual Relative Humidity</td>
<td>74</td>
</tr>
<tr>
<td>Mean Average Wind Speed and Direction</td>
<td>11</td>
</tr>
<tr>
<td>Annual % Frequencies Wind Speed</td>
<td></td>
</tr>
<tr>
<td>0 - 3 MPH</td>
<td>7%</td>
</tr>
<tr>
<td>4 - 7 MPH</td>
<td>21%</td>
</tr>
<tr>
<td>8 -12 MPH</td>
<td>35%</td>
</tr>
<tr>
<td>13 -18 MPH</td>
<td>30%</td>
</tr>
<tr>
<td>19 -24 MPH</td>
<td>7%</td>
</tr>
<tr>
<td>25 -31 MPH</td>
<td>1%</td>
</tr>
<tr>
<td>Mean Number of Days Above 90°F</td>
<td>18</td>
</tr>
<tr>
<td>Mean Number of Days Below 32°F</td>
<td>137</td>
</tr>
<tr>
<td>Number of Total Heating Degree Days</td>
<td>6439</td>
</tr>
<tr>
<td>Mean Dew Point Temperature</td>
<td>44°F</td>
</tr>
<tr>
<td>Mean Possible % Sunshine</td>
<td>57%</td>
</tr>
</tbody>
</table>
AN AUTONOMOUS COMMUNITY FOR THE ELDERLY UNDER THE SUN
SYNOPSIS

The synopsis is a summary of the issues explored in the program, building type study, and site analysis.

The program is summarized showing the basic relationships between the major components. The building type study diagrams the basic configurations of the facilities analyzed. And the site analysis is summarized by showing the proposed site usage.

List of Drawings

1. Overall Program Relationships
2. Building Type Study
3. Proposed Land Usage
PROPOSED LAND USE
6 Design Sequence

The Elderly Community for Autonomous Sun Under
BUILDING DESIGN SEQUENCE

This phase of the thesis proposal is divided into five sections:

1. Preliminary 3 Concepts
2. Scheme 1
3. Scheme 2
4. Scheme 3
5. Final Presentation

In each section is an explanation of the design, some points of major emphasis, problem areas encountered, and feedback received from jury members.

In general, it was realized in the beginning of the project, due to the size and complexity of the components, that a high level of detail and refinement would not be obtained. The first quarter and a half were spent on the program, site analysis, concepts, and the development of a preliminary scheme where all of the design elements worked together in harmony. It was soon realized that each component of the design problem could not be treated individually - compromises had to occur in order to form a solution with unity. The last half of the second quarter concentrated on finalizing a design proposal, although the design still could be refined further, time limited any further development. The third quarter was spent on the development of the systems, and their integration, the final presentation drawings and the preparation of this text.
5. Food service too isolated

Introduction

Utilizing the information generated in the pro-
gramming, site analysis and building type studies,
3 schematic concepts were developed.

The following is a description of each concept,
followed by a drawing of the concept. The small
drawing in the upper right corner indicates how the
concept is located on the building area portion of
the site, which can be seen on the "Proposed Site
Usage" drawing located in the preceeding synopsis
section.

Concept A

Concept A consists of three building masses: The
main building, plant production areas, and agri-
cultural buildings. The concept is set up in a
campus plan arrangement with exterior circulation
between masses. Also located on site but segre-
gated is the staff housing.

The main building mass is composed of four resi-
dential wings radiating from the core space. The
food service and multi-purpose areas are separated
by an enclosed walkway. The life care center is
located between two residential wings, connected
by enclosed walkways and oriented towards the
river. The residential wing is composed of a
double loaded corridor with access to the exterior
from each dwelling unit.

Problem Areas

1. Poor solar orientation
2. Life care center too isolated - no service
3. Poor service accessibility
4. Poor views from north residential wings
Concept B

Concept B consists of two building masses: Main building mass, and the agricultural building complex.

The main building mass is composed of residential wings forming courtyards. The wings radiate from the core towards the west allowing the core to have full orientation towards the river.

A common area is located at the intersection of the residential wings, allowing circulation between the courtyards and residential wings. During the warm months these common areas can be opened, allowing air circulation. The life care center is located on the innermost courtyard, directly off the core area. The staff housing is located adjacent to the core.

The plant production area is located above the residential units (see Building Section). This decreases the distance the residents must travel to get to these areas and provides for easy disposition of any heat excess to the dwelling units.

Problem Areas

1. Life care center has no unobstructed views
2. Long corridors in residential wings
3. Confining views from interior residential wings
Concept C

Concept C consists of three building masses arranged with maximum orientation to the sun. The main building mass is composed of three residential wings with the life care center acting as a focus. The core is spread out to maximize the view to the river. A courtyard is formed between two residential wings and the core and LCC. Staff housing is separated from the main building mass with a view of the river.

Problem Areas

1. Long corridors
2. Buildings too close - obstructed views
3. Poor service accessibility
An Autonomous Community for the Elderly

Under the Sun
SCHEME ONE

Scheme one is composed of three residential wings radiating from the main core. The plant production area is located above the residential units similar to concept B. To eliminate the long corridors and monotony of double loaded corridors, an activity and circulation mall was developed.

Site activities include an agricultural center, recreational area with access to river bank, resident garden plots, orchard and staff housing. Service and employee's entrance occur at a sub-grade level. Employee parking occurs at the rear of the site near service entrance. Guest parking is adjacent to County Road 45.

The residential wings are composed of the dwelling units, the mall and located at the end of each mall is a different activity area. By providing a different activity in each wing, interaction of residents should occur. The resident dwelling units are grouped so that six units share a common entrance off the activity mall. Those units which face out have direct access to the exterior. The units located on the mall are provided with a porch deck assimilating the atmosphere of a residential street. Each porch is provided with a screening device to allow the occupant the option of screening themselves from the activity on the mall. There is a level change of two feet between the dwelling units and the mall, the mall being the lower. This also helps to develop privacy for the residents.

The mall is a two story space with the greenhouse looking into it.

Physical separation must be provided to maintain environmental control in the greenhouse. The main function of the mall is to provide circulation and visual relief. This is accomplished by vegetation, seating areas, paving materials and patterns, and the manner in which you travel thru the space.

The core acts as the major node for the building. In the center of the core is an arboretum which provides a focus and starting point for the malls. The guest waiting lobby is centered around it and the dining room overlooks a portion of the arboretum. All service facilities are located on a lower level under the core.

The LCC is an extension of the core and faces the river. Access to the LCC is either from the core or the mall. The patient rooms are located with a view to the river or into the mall. The critical patient rooms are located around the nurses' station and the medical service facilities are located directly behind the nurses' station.

The receptionist is situated directly inside the entrance and administration facilities are located adjacent to the mall and near the entrance.

In the lobby area is a ramp to the production area above. Located in the plant production area are the growing beds, seedling beds and the research offices. Food harvested is transported to the basement where it is processed and stored.

The buildings structural system is masonry bearing walls supporting structural slabs and steel trusses.
Disadvantages

1. Poor solar orientation for north wing
2. Lack of recognition of river
3. Activity area at end of mall needs form study
4. Life care center needs form and function study
5. Service entrance too prominent
6. Dwelling units are arbitrarily arranged and need study
7. Mall layout is too arbitrary and needs study
8. Structural system needs refinement

List of Drawings:

1. Site Plan
2. Grade Level Plan
3. Upper Level Plan
4. Sections
5. Plan Blow-up
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1 MAIN ENTRANCE
2 GUEST PARKING
3 EMPLOYEE PARKING
4 EMPLOYEE AND SERVICE ENTRANCE
5 RECREATION AREA
6 PASTURE
7 OX BOW COUNTY PARK
8 ORCHARD
9 RESIDENT'S GARDEN PLOTS
10 AGRICULTURAL CENTER
11 STAFF HOUSING
12 ELKHART RIVER
13 COUNTY ROAD 45
14 SERVICE DRIVE
GRADE LEVEL PLAN
1 EMPLOYEE ENTRANCE
2 SERVICE ENTRANCE
3 MAIN ENTRANCE
4 ABORETUM
5 DINING ROOM
6 MECHANICAL ROOM
7 RAMP UP TO GREENHOUSE
8 KITCHEN
9 RESTROOMS
10 LIFE CARE CENTER
11 ADMINISTRATION
12 CHAPEL
13 CIRCULATION MALL
14 RESIDENTIAL UNITS
15 MULTI-PURPOSE ROOM
16 CRAFTS
17 MAINTANANCE SHOP
18 LIBRARY
19 LAUNDRY-RESIDENTS
GREENHOUSE LEVEL
1 GROWING BEDS-TYPICAL
2 OPEN TO MALL BELOW
3 SEEDLING BEDS
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5 OPEN TO DINING BELOW
6 UPPER ARBORTEM
7 RESEARCH OFFICE
8 MECHANICAL CHASE-TYPICAL
PLAN BLOW-UP
1 LIFE CARE PRIVATE ROOM
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3 LIFE CARE DOUBLE ROOM
4 ASSISTED BATHING
5 DWELLING UNIT-TYPICAL
6 PORCH DECK-TYPICAL
7 CIRCULATION WALKWAY
8 PLANTING BED
9 MALL SEATING-TYPICAL
10 COMMON ENTRANCE TO DWELLING UNITS.