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A RETIREMENT COMMUNITY

Donald Seyffarth

March 9, 1967

Arch 489

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ACKNOWLEDGEMENTS

I would like to express my appreciation to all the people who helped make this report possible. I would like to especially thank David Wessel for his helpful criticism of the drafts of my report, and the American Baptist Home Mission for permission to use their name, and my wife Sue for editing the report.

Donald Seyffarth

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PREFACE

The purpose of this thesis is to set a standard from which a retirement community can be designed for Paradise Valley south of Livingston, Montana. The theoretical community which I am proposing is to be called the Paradise Valley Retirement Community and is to be sponsored by the American Baptist Home Mission.

Designing a retirement community is a project too extensive to be done thoroughly in the amount of time available for this thesis. Therefore, I will not undertake to design individual living units, either proximate or congregate. Instead, I will work out an overall site plan, then concentrate on the complete and extensive design of the community center.

This report is being done to complete requirements for Arch 489, required for the Bachelor of Architecture Degree from Montana State University, Bozeman, Montana, James Gough, Jr., Acting Director, School of Architecture.

Conditions

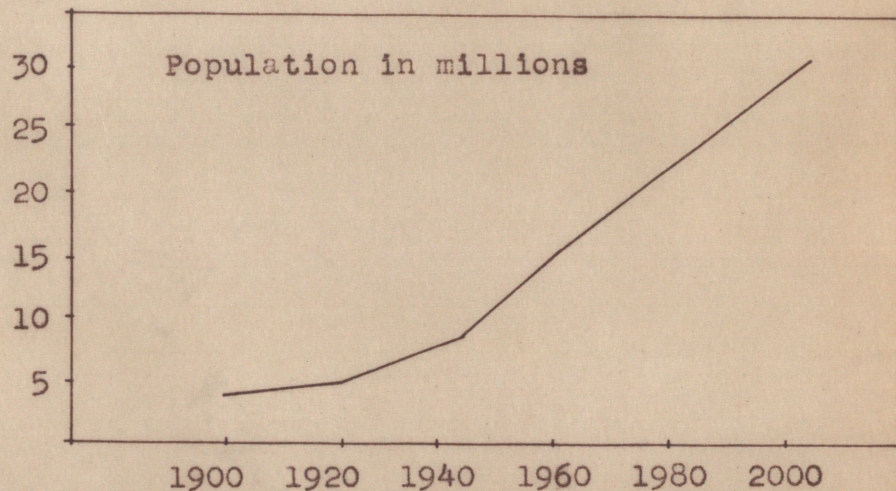
Creating a Need

CONDITIONS CREATING A NEED

General Conditions

Increase in Aged Population

Since 1900 the life expectanct of people in the United States has risen from about 48 years to the present figure of over 70 years. 1/ This increase in life expectancy leads to a constant increase in the proportion of the population that is 65 and over. The population over 65 has increased 5 1/2 times from 1900 to 1965, and it is predicted that by the year 2000, 1 in every 5 persons will be 65 and over. 2/



20th CENTURY INCREASE IN POPULATION OF OLDER AMERICANS
Source: The Older American, President's Council on Aging, (1963) page 4, Chart 1.

1. Planning Homes for the Aged, F.W. Dodge Corporation, New York (1959) page 7.
2. Okazaki, Edward Y., Assistant Regional Representative, Administration on Aging, United States Department of Health, Education, and Welfare, speech delivered to Committee for Development of a Senior Social Center in Bozeman, Montana, (January 25, 1967).

General Situation of the Aged

In addition to the increase in the elderly population, people are marrying at an early age, and young married couples tend to live independently of their parents much more than in the past. Couples are frequently left alone by late middle age with about one-third of their lives ahead of them.

In many fields, compulsory retirement puts a person on the shelf at 65. The trend is toward earlier retirement in the future. This, combined with increasing life expectancy, means that people may be spending as much as half their lives in retirement. ^{1/} The retired person suddenly has no job to occupy his time and energy and give him a feeling of having a useful place in society. He is alone, deprived of his business associates and the social connections that were available through his work, and his children are married with a life of their own and may be living far away. His income is limited and fixed. He has to face the next 10 years, or more, in this situation, which tends to leave him frustrated and bored.

As time goes on he may become unable to keep up a residence of the size he needed when raising a family, and unable to care for himself adequately.

1. Ibid.

He will probably, however, not need complete institutional care, and will not be willing to live in an institutional atmosphere. Also, he is apt to have deep roots and does not want to be removed from his surroundings.

Present Facilities

The problem of providing proper and attractive housing for the elderly had become pressing only in the past 20 years, and is only beginning to be met. For quite some time there have been old people's homes run by local public agencies or religious and benevolent groups, but these are usually very institutional and unattractive, and frequently the standard of living at these places is low. There have also been extensive-care nursing homes for the infirm aged and other disabled persons, sponsored by the same agencies. The more modern of these are efficient, pleasant, and successful for their purpose. Still, they are highly institutional in their atmosphere and unattractive to the independent, competent older person. In many sparsely settled areas the only nursing care available is through local hospitals. The cost of long-term residency in these hospitals is prohibitively high.

There are some retirement homes being built in Montana, but these draw only about 2 percent of the

eligible persons in their service areas. 1/ Part of the reason for this failure to draw people into these homes is the lack of understanding, on the part of the potential resident, of the nature of the retirement home. These are a fairly new development in Montana, and older people still think of them in terms of the old-folks' homes or nursing homes. Another reason is that the nature of these retirement homes still gives the potential resident the feeling that he is relinquishing his independence. Also, the cost of some of these is more than many retired people can afford.

General Present Needs

~~The~~ The greatest present need is to provide a non-institutional retirement community which will be attractive to independent, reasonably competent older people and yet fill their special needs. These include social interaction with others of their age, position, and interests; opportunities for meaningful occupation and interesting recreation to fill their time; conveniences to reduce the efforts of housekeeping and everyday activities to within each individual's abilities; nearby and easily accessible community facilities; readily available and adequate

-
1. Henderson, Carroll, Administrator of Hillcrest Retirement Homes, Bozeman, Montana, personal Interview (January 12, 1967).

medical and nursing facilities; and centrally provided services such as meals and housekeeping for those who cannot provide these for themselves.

Conditions in This Area

I am proposing a retirement community for the Paradise Valley, along the Yellowstone River about 10 miles south of Livingston, Montana. Therefore, the needs in the specific area to be served are of most importance.

Aged Population

In 1960, the population of Montana was 674,767, of which 65,420, or 9.7%, were 65 and over. This is an increase from 50,864, or 8.6% of the total, in 1950, and 36,257, or 6.5% of the total, in 1940. 1/ This shows a steady increase of the aged population, both in numbers and percent, which can be expected to continue. Nationally, in the 65 and over bracket, there were 82.1 men to every 100 women in 1960. Among Montana's aged, as of 1960, there were 105.4 men to every 100 women, indicating the agricultural and near-frontier-like aspect of Montana. 2/

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1. United States Population Census, 1960, Volume 28, "Montana".
 2. Kraenzel, Carl F., and Anna Zellick, Progress Reports and Personal Notes for Project PH 108-66-33 entitled "Aging in the Rural Plains Area of Montana" (1965-1966). Third Progress Report, page 36.

Year	1940	1950	1960
Total	599,456	591,024	674,767
Aged	36,257	50,864	65,420
Percent	6.5%	8.6%	9.7%

MONTANA--TOTAL POPULATION AND AGED POPULATION
Source: United States Population Census, 1960,
Volume 28, "Montana".

The Paradise Valley Retirement Community would specifically serve an area of south central Montana approximately including Carbon, Gallatin, Madison, Park, Stillwater, and Sweetgrass counties. I have assumed that this will be the primary area served because of its proximity to the location of the Paradise Valley Retirement Community. The boundaries of the area, of course, would not exactly follow political boundaries. This area had a total population in 1960 of 61,577. Of this number, 5,720 were over 65. 1/ Sweetgrass County has the largest proportion of aged population in the state of Montana. 2/

County	Total Population			Aged	
	1950	1960	1970	1960	1970
Carbon	10,241	8,317	6,400	1,249	1,146
Gallatin	21,902	26,045	32,653	2,311	2,435
Park	11,999	13,168	13,971	1,552	1,667
Stillwater	5,416	5,526	5,231	660	683
Sweetgrass	3,621	3,290	2,814	499	495

POPULATION STATISTICS FOR FIVE COUNTIES
IN SOUTH CENTRAL MONTANA

Source: Kraenzel, Carl F., and Frances H, MacDonald,
"Some Health Care Needs in Sparsely Populated
Regions, Especially as Related to Older
People", (1965).

1. United States Population Census, 1960. Volume 28, "Montana".

2. Kraenzel, Carl F., and Anna Zellick, Progress Reports Third Progress Report, page 28.

Potential Residents

Of the population in Montana over 65 in 1960, 46,879 were not on the work force. These are the people who are retired and from among whom come the immediate prospects for residents of the Paradise Valley Retirement Community. Others over 65 and those approaching 65 will provide residents in the near future, and the ever-increasing numbers of older people, and lowering of retirement age, in later generations will provide residents for a continuing future. Of course the primary area served would be south central Montana, but residents would be drawn from all parts of Montana. In addition, there is an indication that people who spend their early years in Montana, then move away, frequently return to Montana to retire. Many people from outside Montana may also choose Montana for their retirement.

Financial Situation of the Aged

After retirement, a person frequently has no income from employment. What income he has is limited and fixed, and comes from Social Security, various pension plans, investment income, savings, insurance, etc. Many of the residents would be ranchers, so they would still have ownership or part ownership of the ranch, or the cash from sale of the ranch.

The average annual income for people over 65 is shown by the chart below. Obviously these people

cannot afford to maintain a high standard of living in a private residence and also pay the frequently increased medical and other expenses of the aged. These people need housing provided at an even, fairly low cost, which will provide a reasonably high standard of living and all the special services they require at a cost they can afford.

<u>Age</u>	<u>Single</u>	<u>Couples</u>
65-69	\$2,829	\$4,350
70-74	\$2,268	\$3,832
75 & up	\$1,729	\$2,994

AVERAGE ANNUAL INCOME OF THE AGED IN MONTANA
 SOURCE: United States Population Census, 1960,
 Volume 28, "Montana".

Distance to Available Facilities

Physically, older people need certain special considerations. One that has already been mentioned is the need for more frequent and extensive medical care. 6-7% of the aged are bedridden or housebound and require special care or facilities.^{1/} Living independently in a diverse community, or even in an isolated rural area, they do not have ready and easy access to this care. They often have to travel great distances to reach adequate facilities. ^{2/} In

-
1. Searl, James R., A Retirement Home for Great Falls, Montana, Thesis Report for Arch 489, Montana State College, (1965) page 18.
 2. Kraenzel, Carl F., and Frances H. Macdonald, "Some Health Care Needs in Sparsely Populated Regions, Especially as Related to Older People", (1965)

more sparsely settled areas, people may have to travel as far as 45 miles to a town of 2,500 or more, 325 miles to a city of 10,000 or more, and 400 miles to a city of 50,000 or more. 1/ Travelling such great distances can be very costly, in terms of time, money, and personal discomfort and inconvenience.

Also, sparsely populated areas lack resources for providing adequate facilities. They may lack doctors, nurses, and other professional workers, or may have these workers available only part of the time. They may not have hospitals or nursing homes, and those they have may be substandard. 2/ In sparsely settled areas, the services and facilities that are available are rather expensive. All these factors combined lead people to accept fewer or lower-quality services, postpone the use of services, or employ the services erratically. 3/ In the Paradise Valley Retirement Community, high quality services and facilities of the type needed by older people would be provided right in the community, and at no cost beyond the regular monthly rent.

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1. Kraenzel, Carl F., and Anna Zellick, Progress Reports and Personal Notes for Project PH 108-66-33 entitled "Aging in the Rural Plains Area of Montana" (1965-1966), Third Progress Report, page 51.
 2. Ibid., page 30.
 3. Ibid., Second Progress Report, page 15.

Physical Needs

As people grow older, their vigor and ability becomes reduced. They need homes that are easier to care for than the standard residence, and they may be unable to do many household chores. They are limited in their ability to care for themselves and need special conveniences which are not found in the standard home or are too expensive to provide for themselves. They may even need human assistance to help care for themselves. All these could be provided in a retirement community.

Even if their physical impairment is not severe, they may find difficulty in such errands, necessary in a diverse community, as shopping, laundry, and getting about between their home and various other places. A retirement community could provide central, easy-to-reach limited shopping and laundry facilities, or services in these areas for those who required them. It could also provide convenient transportation to local shopping areas, and to social and religious functions.

As people grow older, they naturally tend to become weaker, more unsteady in standing and moving, and less co-ordinated. The rugs, floor and wall materials, doors and doorways, furniture and fixtures, and layout of the average home are not safe for them. They require safety features such as handrails, non-slip floors, room layout and furniture to minimize

tripping and stumbling, fixtures which help prevent falling or awkward positions, all of which can be provided in a retirement home.

The aged also frequently have problems with sight and hearing, and sometimes with speech. Living in a close community where such problems are expected and understood would eliminate difficult situations they might cause.

One of the frequent problems of the aged is that single or widowed older people may suffer from malnutrition. They have reduced appetites, little energy for preparing careful meals, and no one else to be concerned for. The result is that they tend to nibble at little things and do not have a balanced, or even sufficient, diet. Common dining facilities in a retirement community would help solve this problem. Attractive, balanced meals would be provided, and having company at mealtime would help stimulate appetites.

Social Needs

Socially, there is also a need for a retirement community of the type I am proposing. First, older people are often lonely and left out of the mainstream of life. The retirement community could provide crafts, opportunity to work around the grounds, recreation facilities, as well as social activities.

Also, the sudden loss of employment income can lead to a sudden lowering in standard of living.

This makes the person feel inadequate and depressed. A retirement community could provide pleasant surroundings at a price within his means.

Many of the people who could use the facilities of a retirement community, for example farmers and ranchers, are reluctant to move into a retirement home of the type now available because they have been very independent all their lives and dislike the thought of institutionalised living. A retirement community of the type I propose would provide independent housing units for those who wanted them as well as congregate living for those who need it, and so fit the needs of all.

Another need for such a retirement community in this area is that older people frequently have deep roots. They may have spent the most productive and meaningful years of their lives in south central Montana. They have worked, played, raised their families here. To them, this area is home, and they don't want to leave. It is a hard decision to even leave the house in which they have lived. Paradise Valley Retirement Community would provide a community with as much of a home-like atmosphere as possible and still give the conveniences and services they need. Also, it is fairly central to this area, from which many of its residents would be drawn, and it is in Paradise Valley, country typical of the Montana they love and want to stay near.

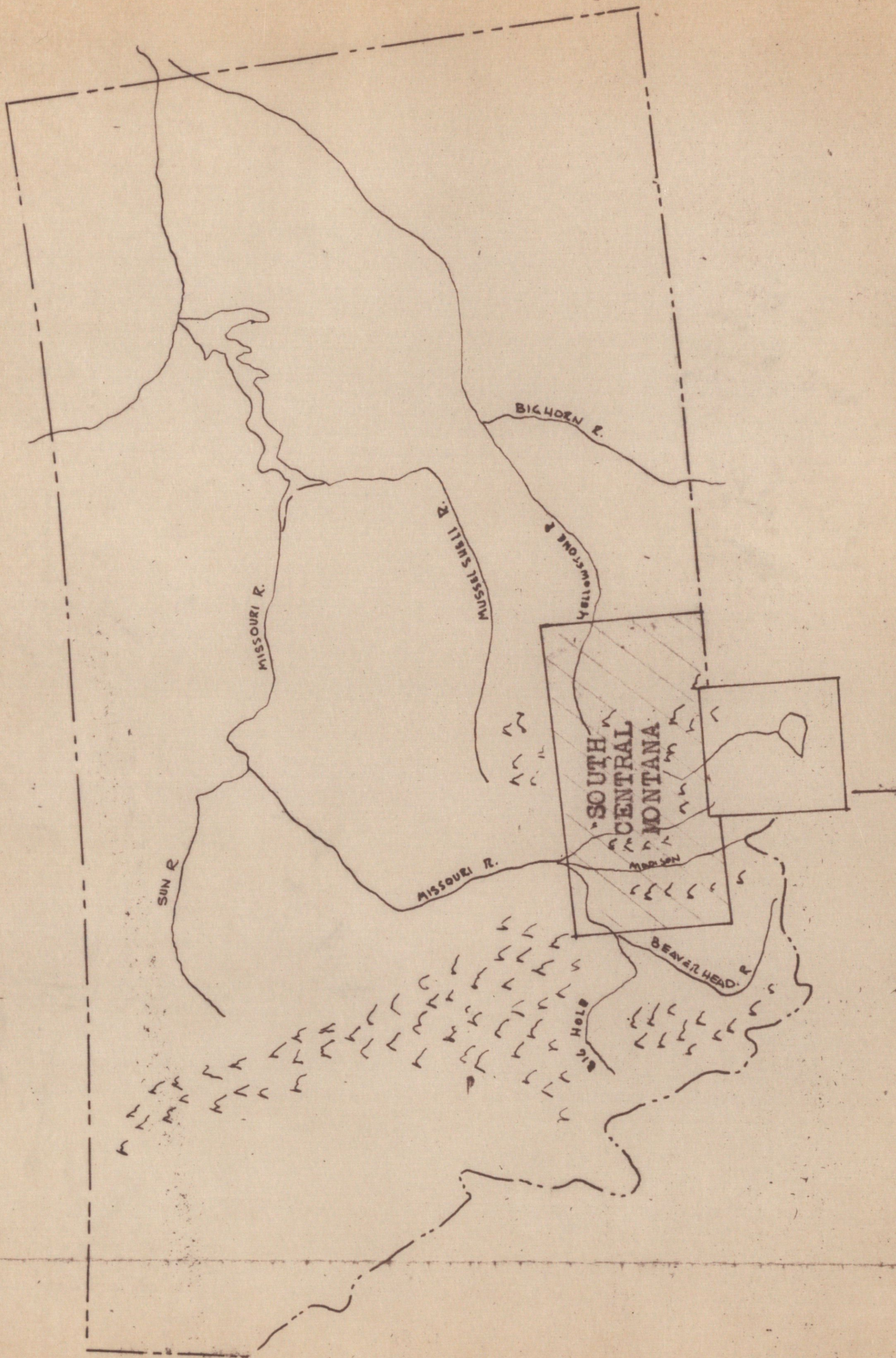
Local Conditions

LOCAL CONDITIONS

Geography

The Paradise Valley Retirement Community would primarily serve south Central Montana. This can be generally defined as the area bounded on the west by the Jefferson and Missouri Rivers, on the south by the Montana-Wyoming border, on the east by the eastern edge of the Absaroka Mountains, and on the north by the Crazy and Bridger Mountains areas. It takes in approximately the area included in Carbon, Gallatin, Park, Stillwater, and Sweetgrass Counties. This is an area primarily of mountains, mountain valleys, plateaus, and high plains.

Paradise Valley is located along the upper Yellowstone River, extending from Yellowstone Park to a constriction of the Mountains about 2 1/2 miles south of Livingston. It is bounded on the west by the Gallatin Range and on the east by the Absaroka Mountains. It is about 3 - 4 miles wide in the lower(northern) part, and it narrows to less than a mile to form Yankee Jim Canyon for about 15 miles at the upper end. The floor of the valley is primarily low rolling hills, rising by ridges to the Gallatin Range on the west, and rising abruptly on the east to the front range of the Absaroka Mountains, Peaks of around 11,000 feet. The highest point in Montana, 12,799 foot Granite Peak, is in the interior of the Absaroka Mountains. The elevation of the valley floor ranges



MAP OF MONTANA SHOWING SOUTH CENTRAL MONTANA
SOURCE: Encyclopaedia Britannica, Volume 24

from about 4600 feet at the lower end to about 5300 feet at the upper end.

History

South central Montana has a varied and colorful history. Originally it was the domain of the Blackfeet and Crow Indians. A few French-Canadian fur trappers may have wandered this far in the late 1700's or early 1800's. The first record of white men in the area is of the Lewis and Clark Expedition in 1805 and 1806. Soon after the reports of the Lewis and Clark Expedition, fur trappers, mountain men, and traders came into the area. In the late 1850's and early 1860's, gold and silver discoveries were made in many places in southwestern and south central Montana, bringing in a sudden influx of treasure seekers.

Shortly afterward, more permanent settlers came in, starting with large cattle ranching operations. Lumbering operations contributed to development. Later, homesteaders brought in farming. Yellowstone Park, just south of the area, drew in tourists who found south central Montana a delightful vacation area in its own right. The founding of the college, now Montana State University, in Bozeman, provided a cultural and educational center for the area. Now, the area is primarily agricultural, with cattle ranching and grain farming as main industries. Education, lumbering, and tourism are also important.

Paradise Valley was the summer home of the Crow Indians before the coming of the white man. The first record of white men in Paradise Valley is of the William Clark party which explored the Yellowstone River on the return trip of the Lewis and Clark Expedition in 1806.

In 1807, John Colter discovered the area of thermal activity, south of Paradise Valley, which became known as "Colter's Hell." In 1872, this area became Yellowstone Park, which had a great deal to do with the development of the valley.

Jim Bridger and John Bozeman are credited with bringing the first settlers to Paradise Valley in 1864. They had been leading wagon trains by new, and separate, routes from the Oregon Trail to the Gallatin Valley and Virginia City. The two trains were together briefly along the Yellowstone in the area where Livingston now stands. The year before, Thomas Curry had discovered gold in Emigrant Gulch in Paradise Valley. He met the trains and persuaded some members of the party to follow him into the valley in search of gold. On his return trip east, Bridger told trains he met of the discovery at Emigrant, and more gold-seekers moved into Paradise Valley. 1/

The railroad was a major factor in the development of the valley. On December 1, 1882, the Northern

1. Whithorn, Bill, 60 Miles of Photo History, Park County News.

Pacific Railroad reached Livingston, Montana. In 1883 it built the Yellowstone Park branch up through Paradise Valley. The construction started from Livingston July 1, and reached Cinnibar, 50 miles up the valley, on August 30. Overnight, towns sprang up at maintenance stations along the construction. Cinnibar, which was the railhead for nearly 20 years before the line was continued to Gardiner, became rather important in the valley. Other towns born of the railroad were Pray, Emigrant, Electric, Aldrich, Corwin, and others. ^{1/} The presence of rail facilities helped the development of the industries in Paradise Valley. The cattle industry especially began to grow in importance at this time. The easy access also boosted the tourist industry.

As ranching became more dominant and mining construction decreased, the railroad boom towns died. Presently, the main industry in Paradise Valley is ranching. Tourism, lumbering, and sport fishing are also important.

Climate

Climate and weather have a great bearing on the suitability of the location and on the design considerations of the project. Therefore we should study climate and weather conditions of Paradise Valley. No direct weather information is available

1. Ibid.

on Paradise Valley, so we must study these conditions by a comparison to those in Livingston.

"The climate of Livingston is mild and dry. The temperature ranges from 31 - 53 degrees in the spring, 49 - 78 degrees in the summer, 33 - 60 degrees in the fall and 25 - 40 degrees in the winter. Livingston has few days below zero degrees in the winter, no damaging floods, no serious hailstorms and is not subject to tornados. While snow gets deep in the surrounding mountains, bare ground is common to Livingston in the winter." 1/

The average precipitation per year is 13.18 inches, and the average snowfall is 49.4 inches. The average winter winds range from 40 - 70 miles per hour. 2/

While Paradise Valley is close to Livingston, the weather is somewhat different due to the mountain formations.

A rancher near the location of the project described the weather in the area. The temperatures average about the same as Livingston. There is much less wind in the valley than at Livingston, with the velocity usually not more than 20 - 40 miles per hour.

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1. Livingston Chamber of Commerce Brochure (1966).
 2. United States Weather Bureau, Livingston, Montana (1967)

The rainfall and snowfall are slightly more than at Livingston. 1/

Social and Cultural

South central Montana is primarily an agricultural society. The population of the 6 counties involved is 61,557, or 3.74 people per square mile. Of these, 5,723, or 9.3%, are 65 or over. 2/

The culture of the area is closely tied to its recent frontier history. Many of the residents are children or grandchildren of the first pioneers. Many others were pioneers themselves in the sense that they came into a largely unsettled area and built up ranches or businesses from nothing. Many aspects of life in this region, especially in rural areas, are still very frontier-like. These factors have a deep effect on the attitudes of the people. The people tend to put a very high value on independence, self-sufficiency, and individuality. Even after retirement, they are reluctant to surrender these ideals and live in an institutional atmosphere.

Social and recreational facilities readily available from Paradise Valley include the University at Bozeman, the Bozeman-Livingston Community Concert,

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1. Basset, E. R., Rancher in Paradise Valley, Personal Interview, (January 29, 1967).
 2. United States Population Census, 1960, Volume 28, "Montana".

22 churches of major denominations, golf course and public parks at Livingston, local rodeos and fairs and the annual Trout Derby at Livingston, and Yellowstone National Park. The area is renowned for good hunting, and the upper Yellowstone is one of our nation's Blue Ribbon trout streams.

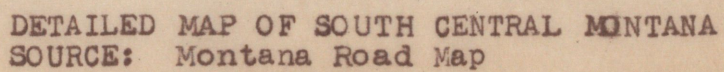
Economics

The economy of south central Montana is primarily agricultural. The labor force is divided as shown in the chart below. The area is served by the Northern Pacific Railroad, the Milwaukee Railroad, by the east-west highway US 10-Interstate 90, by north-south highways US 212, US 191, US 89, Montana 287 and 287A, and by Northwest Airlines, Frontier Airlines, and Western Airlines.

Agriculture	6946	33%
Fisheries & Forest	75	4%
Mining	415	2%
Construction	1271	6%
Manufacturing	921	4%
Transportation & Utilities	2446	12%
Trade	3477	17%
Services	4123	20%
Public Administration	745	3%
Not Reported	391	2%

LABOR FORCE IN SOUTH CENTRAL MONTANA

SOURCE: United States Population Census, 1960, Volume 28, "Montana".



Site Conditions

SITE CONDITIONS

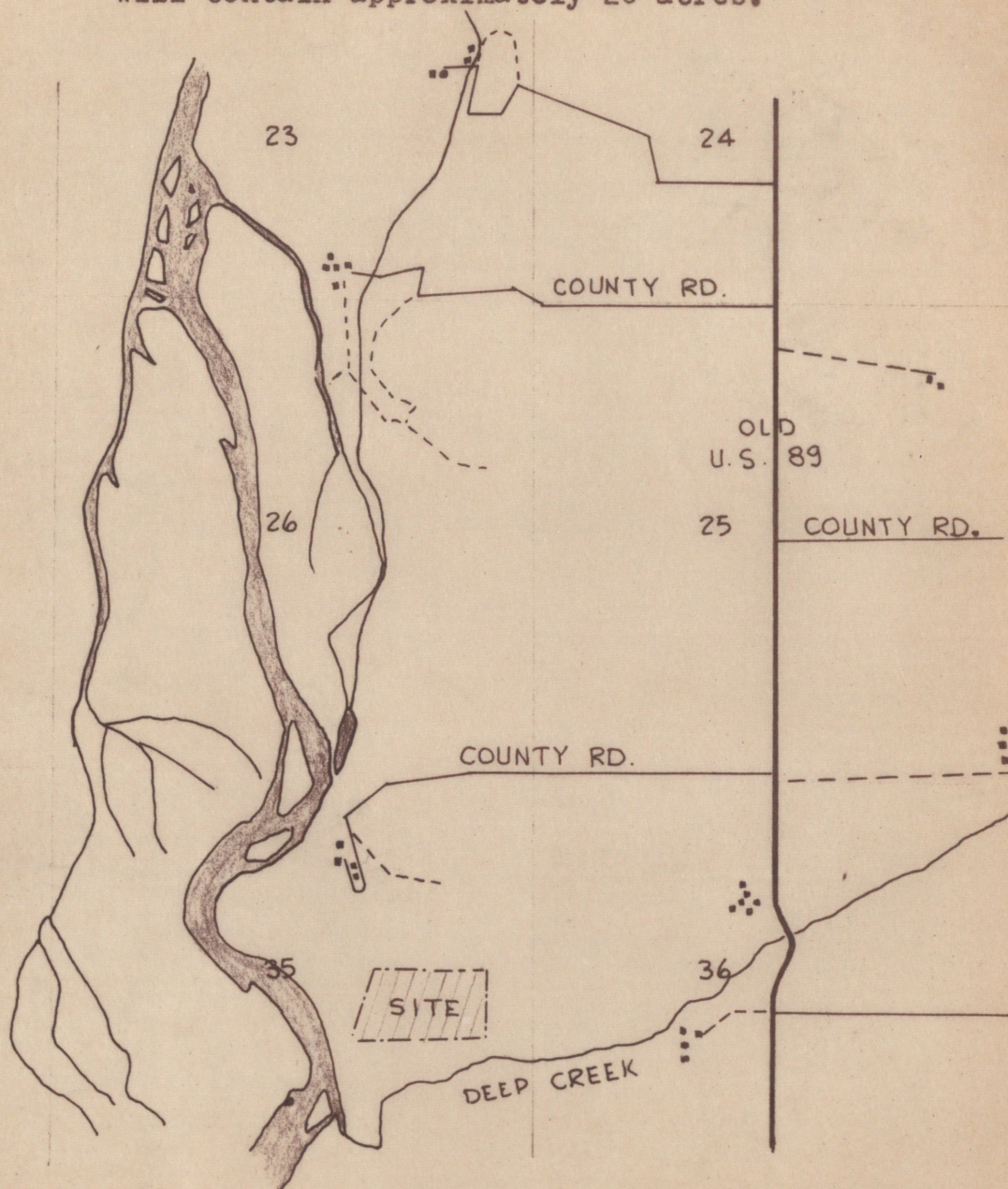
Choice of Locale

Paradise Valley was chosen as the locale for the retirement community for several reasons. It is centrally situated in south central Montana, which is the primary region to be served, and is easily accessible to the whole region. It is an area typical of south central Montana -- a high valley surrounded by mountains -- and, as such, is the type of place in which a person who had spent most of his life in this region would feel a home and wish to stay. It is reasonably close to Livingston, Yellowstone Park, Montana State University, and other areas of social opportunity. The climate in Paradise Valley is suitable for a retirement community. The wind velocity is moderate compared to many areas in the region. The temperatures are moderate to moderately cold, with only occasional extremes. The weather is mild and rather dry, with the surrounding mountains protecting the valley from severe storms.

Location of Site

The Paradise Valley Retirement Community will be located about 10 miles south of Livingston, where Deep Creek joins the Yellowstone River. The selected site is in Section 35 of Township 3 South, Range 9 East, near the center of the section. The community would be built on the headland north of Deep Creek and east of the Yellowstone, immediately above the low land where Deep Creek runs into the Yellowstone,

It would include land from the edge of the headland on the west and south to approximately the half-mile line just north, and east to a tree-lined ditch which is one-tenth mile west of the section line. The site will contain approximately 20 acres.



LOCATION OF SITE
Scale: 1:24000
SOURCE: US Geological Survey

Access to Site

The site would be accessible by the East River Road (old highway 89) and about 1 mile of gravel road leading west from this highway. The site itself is about 1/2 mile south of the gravel road. A gravel access road will have to be built going straight south from the county road to the community.

The community would be fairly closely related to Livingston. It would depend on Livingston for shopping opportunities, some social and recreational opportunities including church services, and a small degree of services.

Transportation to and from Livingston would have to be arranged, but probably will not pose any great difficulties. The experience of other retirement communities is that a large number of the residents keep cars of their own. The out-of-town location would encourage a larger degree of this, so many of the residents would have a car of their own or would have friends who had one, making it fairly easy to get into town when they wished.

Also, the community would have a free, or very low fare, bus service to and from Livingston, providing transportation on a schedule adjusted to fit the needs of the residents. The busses would have to be equipped for the convenience and comfort of older people. Under most circumstances, a 10-mile bus ride on good roads is not a severe deterrent to a normally active resident.

Recreation

In addition to Yellowstone Park and the many other recreation facilities in the area, this site has its own recreational opportunities. It is above the Yellowstone River, one of Montana's Blue Ribbon Trout Streams. This is a perfect opportunity for the fisherman. For those who enjoy fishing but are unwilling or unable to climb up and down to the river, walk through brush and rough gravel, and wade in cold running water, the Jumping Rainbow Ranch is less than 1/2 mile away. This ranch is a recreational area being developed along the Yellowstone River. It offers 10 trout ponds, for fishing without a license at a low fee. The ranch will also have several varieties of ducks and geese, and some swans. The finished development will be somewhat like a private recreation park.

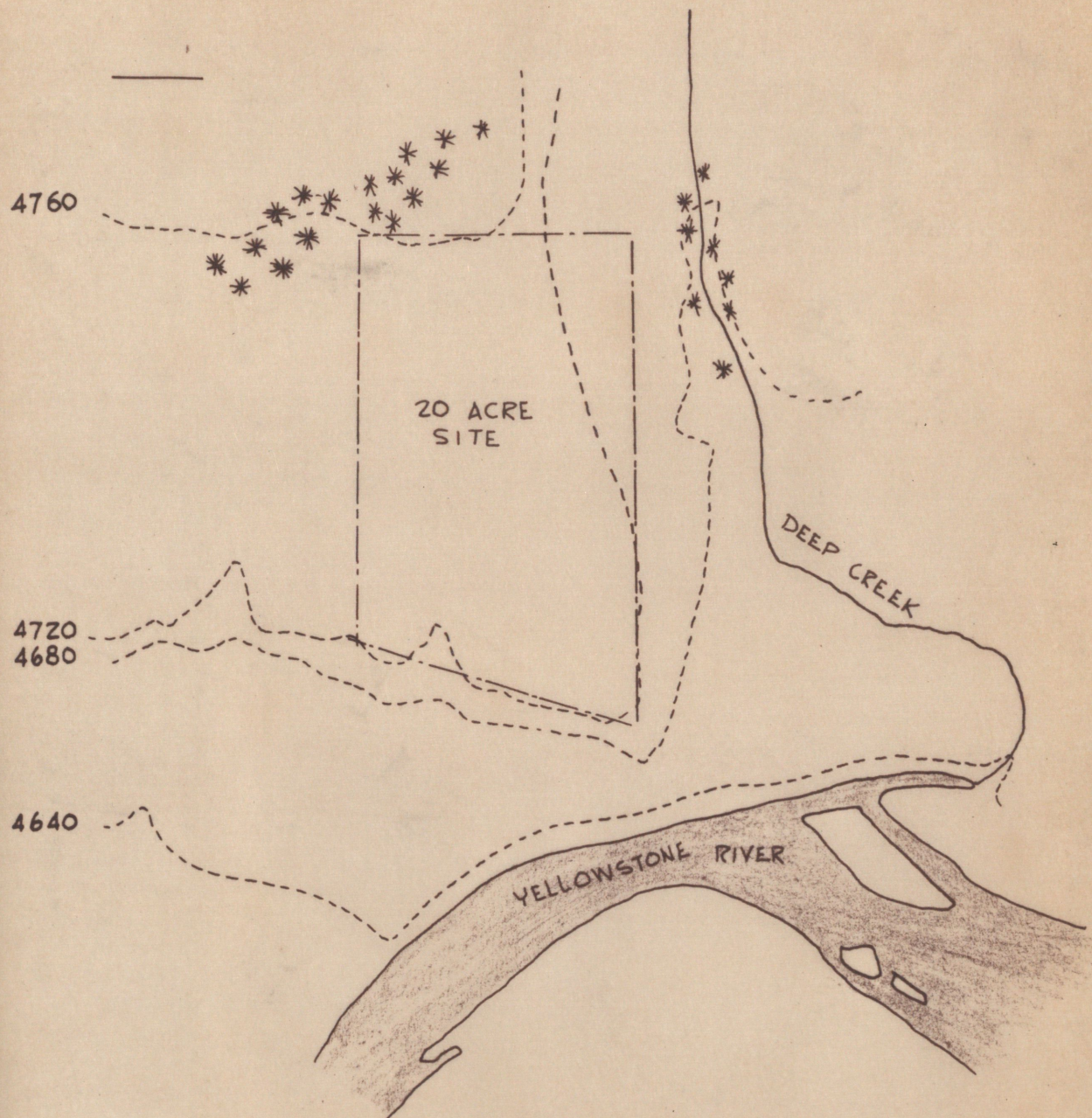
Utilities

Electric service would be provided by extensions from existing REA service in the area. Drilled wells would provide water for human use. Irrigation ditches are adjacent to the site, and irrigation for grounds could be arranged using these ditches as a source.

Topography

The site is very gently sloping. The ground drops 40 feet in about 3/4 mile from north to south, and drops 40 feet in 1/4 mile from east to west. Topography is very gentle. Just beyond the edge of

the site, the headland drops 40 feet into the immediate valleys of Deep Creek and the Yellowstone River, in a 60 - 80% slope on the west, and a 40 - 60% slope on the south



TOPOGRAPHICAL MAP OF SITE
Scale; 1:6000
SOURCE: US Geological Survey



VIEW NORTH FROM SITE



VIEW EAST FROM SITE



VIEW SOUTH FROM SITE



VIEW WEST FROM SITE

View

The site of the Paradise Valley Retirement Community is ideally located for a beautiful view. To the east and southeast the majestic, snow-capped Absaroka Mountains offer a breathtaking sight, including 10,960 foot Emigrant Peak and 11,206 foot Mount Cowen. The upper part of Paradise Valley reaches in full view to the southwest. On the west, across about 2 miles of valley floor, rise grassy hills leading up to the first wooded ridges of the Gallatin Range. On the north the view is blocked by a bare, slightly rocky hill about 1 mile north of the site.

From the west edge of the headland, you can look directly down in the Yellowstone River, with its gravel bars and cottonwoods. From the south edge you look down into a grassy lowland and beyond that the brush-choked bed and mouth of deep creek. To the east of the site is a line of cottonwoods along an irrigation ditch.

Soil Conditions

No soil tests have been taken at this site. However, interviews with ranchers who work the area gave a good idea of soil type. The soil is a rich sandy loam, with some gravel, reaching clay at about 30 - 40 feet below the surface. Ranchers say this soil is very fertile and grows good grass and crops.

Sun Orientation

As in any northern latitude, the sun orientation is somewhat to the south, especially in winter. The mountains make sunrise approximately one hour later and sunset about 20 minutes earlier on the average than they would be in a region of level horizon, but they do not greatly shorten or darken the day. Also, the mountains eliminate the glaring low-angle sun of early morning and late afternoon.

**Economic
Considerations**

ECONOMIC CONSIDERATIONS

Introduction

Paradise Valley Retirement Community will be built primarily to meet the needs of elderly people in the middle-income bracket. It will hopefully offer an attractive place to live, both socially and physically, and a standard of living higher than in inadequate nursing homes or the private homes they could afford to maintain on retirement incomes, and also provide all the services and special care and facilities they need, all at a cost within their means.

As of 1960, the average annual income for a single person over 65 ranged from \$1,729 to \$2,827; and for a couple, from \$2,294 to \$4,350. ^{1/} The lower figures are for persons over 75. (see chart on page 8) Paradise Valley Retirement Community would be priced so that the average single unit would be easily within the means of the average newly-retired single person. This means that the average single unit should not cost more than about \$2,800 per year. On the same basis the average double unit (for a couple) should not cost more than about \$4,200 per year. Of course, there would be a variety of units, with some being over and some well under the average cost.

1. U.S. Population Census, 1960, Vol. 28, "Montana"

I am assuming that I will be able to use the income figures for those just over 65 and to a degree pay less attention to the income of the older people primarily because it will be from 5 to 10 years before I can get the community built and in operation. My figures show that the people just over 65 have a much larger annual income than those over 75. This reflects a tendency of people to be saving more for their later years, whether through direct savings, investment, insurance, pension plans, social security, or other means. Therefore, I can safely assume that what is now the average income for persons just over 65 will be that for the persons near or over 75 at the time Paradise Valley Retirement Community begins operation, and that the average income of persons just over 65 at that time will have increased proportionally.

Paradise Valley Retirement Community will be built to accomodate 200 residents. This number was chosen because information from several successful retirement communities indicated that a number in this area is economically most successful. I assume that my potential residents would be about 30% living married, and 70% single, widowed, or divorced. All these latter can be considered single so far as housing arrangements are concerned. This percent relationship was assumed on the basis of the percentages of married and single in other retirement homes, both

inside and outside Montana, the percentages married and single over 65 in Montana according to the 1960 census, and my own feelings as to the type of residents that will be drawn by a community of the type I am planning.

I must assume that I will be able to fill the community to reasonably near full capacity within 5 years after it begins operation, to be economically feasible. This assumption should be justified by the fact that by the time the community opens, there will be over 6000 potential residents in the primary area served, not to mention residents drawn from the rest of Montana and elsewhere in the country. This would mean drawing about $3 \frac{1}{3}$ of the potential residents within 5 years.

Other retirement homes in Montana have had trouble meeting this goal. On the national level, such retirement communities draw only 2% of the eligible potential residents. In Montana, the level is even lower.

One of the main reasons for failure to draw an adequate number of residents is a lack of understanding by potential residents of the nature and purpose of retirement communities. This is partially due to the newness of such communities, leaving people memories of old-folk's homes, poor houses, and nursing homes. In some degree the time elapsed before the opening of Paradise Valley Retirement Community

would help counteract the newness of the idea of retirement communities. However, this would bring only a small amount of change in attitude. It would be necessary to launch an extensive campaign of public education on the nature and purpose of retirement communities and specifically of Paradise Valley Retirement Community. Such a program of education should be directed mainly at the primary service area, and would have to begin immediately to have a sufficient effect by the time the community opens.

Also, an extensive advertising campaign should be arranged to begin as soon as construction is well under way. This is one opportunity which seems to have been missed by most of the retirement homes in Montana and surrounding states. Such a campaign should be directed mainly at the primary area to be served, but should be directed in some concentration at all of Montana and adjoining regions, and should have some national reach.

Another reason that Paradise Valley Retirement Community may be able to draw residents is that it is not connected directly to any established community or small local area. Rather, it is located in such a way to relate it to a large geographic area -- the mountain and plateau area of south central Montana. Also, it is located in a widely known area, on the upper Yellowstone River, and near the world-famous Yellowstone National Park. These two factors combine

to make a wide-ranging drawing card and reduce the likelihood that it would draw only from a small area. This last problem is one which plagues many of the retirement communities in Montana.

One feature of the proposed community which would draw a large number of residents is that the prices would be easily within the reach of the middle-income bracket of retired people, yet the standard of living would be high, the living situation attractive, and all necessary facilities and services would be provided.

The site, being scenic, rural, and independent in nature, would make it more attractive to the ranchers and others who have independent, pioneer-like attitudes toward life. These make up a large number of the people who are reluctant to join many retirement communities.

Financing

Paradise Valley Retirement Community would be financed by a loan insured by the Federal Housing Administration. Since it would be sponsored by a non-profit organization, the American Baptist Home Mission, it would be tax exempt. FHA sets the amortization period at 40 years, and a current maximum interest rate of 5 1/2%. Amortization is discussed under Depreciation and Amortization.

Construction Cost

Many general factors affect construction cost. Some of them are:

1. Area of country -- Paradise Valley is an area in which costs of construction are fairly reasonable. Labor costs in this area are somewhat uncertain, but may be lower than in some areas of the country. Prices of local materials are fairly low, but transportation costs on materials brought in may be high.
2. Climate of area -- This area has a 5 - 6 month building season for outside work. For inside work, some heat would have to be provided. Also, fairly cold winters require insulation, heating units, etc., to be considered in the design and construction of finished units.
3. Size of project -- A project to accommodate 200 residents is widely considered to be an economical size to operate.
4. Site -- The site consists of 20 acres of native pasture, on an odd-shaped headland, (see map page 25) with productive soil. Irrigation is available, but not developed. The estimated cost per acre would be between \$150 and \$250. About 1/2 mile of flat dirt trail would have to be improved to gravel road for easy access. The building site itself is nearly flat, although it drops abruptly at the south and west edges. (see map page 25) It is large

and open enough to allow easy maneuverability, etc., during construction. Water supply for human use would be from private wells and irrigation water from adjacent irrigation facilities, through agreement with present users. A private sewage disposal system would have to be installed. Electric service would be available through REA service in the area. All utility services except water and sewerage would be electric.

5. Codes and regulations -- Paradise Valley Retirement Community would have to conform to National Building Codes, FHA construction requirements, and insurance ratings. 1/

The total construction cost will include the following items:

Legal and accounting fees

Real estate transfer fees

Architect's fees

Consultant's fees

Permits, surveys, test borings

Utility connection fees and private utility construction

Land

Buildings

Building equipment and furniture

Site development and landscaping

1. Musson, Noverre, AIA, and Helen Heusinkveld, Buildings for the Elderly, Reinhold Publishing Corporation, New York (1963) page 26-27.

The total construction cos, I estimate, will be about \$10,000 per resident, or \$2,000,000. At an estimated cost of \$20 per square foot of building floor space, not including kitchen equipment, this would give 100,000 square feet, or 500 square feet per resident.

Operation Costs

Operating costs include all the normal costs of running the community and providing the services, when the community is in full operation. The first few years, before full operation is reached, may run above normal operating cost per resident. However, these costs must be figured on the basis of full operation. The operating budget will include the following items:

Salaries, plus payroll taxes, hospitalization, retirement fund payments and other employee benefits.

Administrative expenditures.

Legal and accounting fees.

Public relations expenditures.

Licenses for operation.

Housekeeping expenditures.

Laundry service.

Health care.

Recreational and vocational program expenditures.

Utilities.

Expense accounts and allowances.

Contract services.

Insurance.

Replacement of capital items.

Maintenance of buildings, grounds, furnishings,
and equipment.

One retirement home in this area, which is not operating at full capacity, says that operating expenses are \$200 per resident per month. Although prices will rise slightly before Paradise Valley Retirement Community is in operation, institutional expenses do not rise too rapidly. Also, this figure is not from a period of full operation. Therefore, I feel I can estimate that operating costs for my community will be \$200 per resident per month.

Depreciation and Amortization

The total estimated cost of Paradise Valley Retirement Community is \$2,000,000. I am assuming a depreciation period of 50 years. This amounts to \$40,000 per year, or \$200 per resident per year, or \$16.67 per resident per month.

The amortization period set by FHA is 40 years. \$2,000,000 at 5 1/2% simple interest for 40 years would total a maximum of \$2,440,000, or \$305 per resident per year, or \$25.42 per resident per month.

Income Budget

The monthly rent paid by residents would have to pay for operating expenses, depreciation, and amortization. This amounts, by totalling our figures, to \$242.09 per resident per month. Since I

didn't allow for any retirement of interest in my figure for amortization, this is probably too high. Therefore, it is safe to assume an average monthly rent per resident of \$240 would pay all these costs and still leave a slight profit. This would total an average annual rent per resident of \$2,880. This looks fairly high considering that the average annual income for a person 65-70 in 1960 is \$2,887. However, as I mentioned before, by the time Paradise Valley Retirement Community is in operation, this figure will probably be well below the average. Also, these figures are the average rent per resident per month. The actual rent per month will vary for each resident depending on what size and type of unit he is occupying. Also, those who wish to supplement their income or to occupy themselves for other reasons, could work on the grounds or community facilities.

In addition to the monthly rent, each single person would have to pay a \$2,00 entry fee upon becoming a resident of Paradise Valley Retirement Community, and each couple, \$3,000. The sum would be pro-rated over a period of 5 years, so that if a person decided to leave the community before 5 years as a resident, he could have a portion of his entry fee refunded. Once a person had become a resident and paid his entry fee, he would be assured of residency for life despite any circumstances except his own decision to leave.

These entry fees would be re-invested in the community, and used to help defray expenses before the community gets into full operation, to help pay expenses for residents whose income is cut off or lowered so they cannot meet their monthly rent, to help pay for certain maintenance and improvements, or as an invested reserve against future needs.

Justification of Space Budget

I was advised that a space budget of approximately 60% rentable space and 40% non-rentable space would be economical. Here I will justify this within the budget for Paradise Valley Retirement Community.

I mentioned above that to meet all costs, the income to the community should average \$240 per resident per month. This is a needed monthly income of \$48,000 per month. The chart below shows area of and income from rentable units.

<u>Number</u>	<u>Area</u> (sq.ft.)	<u>Occupants</u>	<u>Rent</u> (per month)	<u>Total Income</u> (per month)	<u>Total Area</u> (sq.ft.)
Proximate					
15	500	single	\$220	\$3,350	7,500
10	800	couple	\$350	\$3,800	8,000
Congregate					
30	230	single	\$200	\$6,000	6,900
80	300	single	\$250	\$20,000	24,000
5	300	couple	\$375	\$1,875	1,500
15	400	single	\$325	\$4,875	6,000
15	400	couple	\$450	\$6,750	6,000
Allowance*				\$1,750	
Totals				<u>\$48,050</u>	<u>59,900</u>

AREA OF AND INCOME FROM RENTABLE UNITS

*I have allowed \$50 per month per resident for 35 residents of proximate housing, since these people

will not get meals or housekeeping service which congregate residents will get. My cost-per-resident estimates given above were based on providing these services for all residents, so I can subtract the cost of providing these services to those residents who will not use them.

**Functions
to be Housed**

FUNCTIONS TO BE HOUSED

Introduction

The functions to be housed in any building are decided by two factors: The amount and kind of functions needed, and the budget, both in space and money available. The functions needed in a retirement community are fairly standard. Each of these will be explained below, where they are listed individually.

The space budget for Paradise Valley Retirement Community is 100,000 square feet, with approximately 60% rentable space and 40% non-rentable space. The rentable space includes all private living space, that is, the actual apartments occupied by the residents. Non-rentable space includes all common facilities, administration and service areas, corridors, stairways, entryways, and all area not actually included in rentable apartments. The economic budget is related to the space budget, by the fact that the average cost per square foot for the whole community must be \$20, including equipment, and we must work within this limit.

For economy of space, it is necessary to combine functions wherever this is reasonably possible. Since no functions can be combined with the living space without intruding on the privacy of the residents, all this must be done in the non-rentable area. This leaves all functions except living space to be put into 40% of the total area, which makes combination of functions for economy very critical.

The medical and health-care facilities are not included in either rentable or non-rentable area. These facilities are independent and self-supporting due to such programs as Medicare and certain insurance payments. Also, a certain amount of general health care cost is included in the residents' monthly rent.

Garage or carport space also is not included in either classification, but is rented independently.

Functions

Administration

Lobby

1. reception area
2. waiting area

Restrooms -- located just off lobby

Offices

1. administrator's office
2. general office

Conference Room

To be used for meetings of boards and other small groups
To be combined with Chapel and Library

Medical and Health Facilities

I

Infirmery

To provide hospital facilities

Nurse's Station

1. examination room
2. treatment room
3. dispensary
4. linen closet

Toilet and bath areas -- located near nurse's station and infirmery

Doctor's Office

1. personal office
2. two examination rooms

Dentist's Office

To be used on part-time schedule

EKG and BMR Room

1. examination and test room
2. office

Therapy

1. therapy room
2. office

X-Ray

1. X-Ray room
2. dark room

Laboratory

Used for all laboratory analyses for medical and health facilities

Waiting Room

Used as waiting area for all out-patients and visitors

Services and Mechanical

Kitchen

1. kitchen area capable of preparing 3 meals day, plus snacks, etc., for residents of congregate housing and their guests.
2. food storage areas and receiving area
3. dishwashing area
4. garbage disposal area
5. dietitian's office

Storage

1. residential storage
2. institutional storage

Mechanical

1. heating plant
2. ventilation facilities
3. electrical systems
4. water supply facilities

Maintenance and Shipment

Staff Dining and Lounge

Staff Restrooms and Lockers

Common Facilities

Dining

1. dining area for residents
2. cafeteria facilities

To provide 1 served meal and 2 cafeteria meals a day for congregate residents and guests, plus some snacks and party meals

To also serve as an auditorium

Recreation and Lounge

1. area for table games
 2. lounge area
 3. area for cards and other portable games
- Also to be used for parties and other special occasions

Hobby Room

To include areas for different types of hobbies, storage areas, and toilets

Chapel and Library

1. chapel area
 2. library area
- To combine function of conference room

Lounges

To be scattered at logical intervals throughout congregate housing

To provide space and facilities for individuals or small groups to relax or get together near their private rooms

Men's Club

To provide space and facilities for men to get together away from the women

Laundry

To provide space and facilities for congregate residents to do their laundry

Barber and Beauty Shop

Halls, Stairs, Elevators

Guest Rooms

To provide a sleeping and bath area for overnight guests

Living Areas

P Proximate

To provide separate and independent living units for residents who desire this type

Congregate

To provide living-sleeping and bath areas for people who wish or need to live under more care

Outside Areas

To include landscaped grounds, garden areas, parking areas, and various outdoor recreations

Garages or Carports

To provide sheltered parking for residents who wish to rent it

Requirements of Functions

Administration

Lobby

1000 sq. ft.

Contains

1. information
2. switchboard
3. chairs, sofas
4. telephone booths

Restrooms -- men's and women's -- 100 sq. ft. each

Contain

men's

1. Water closet
2. lavatory

women's

1. water closet
2. lavatory

Offices -- administration and general -- 300 sq.ft. ea.

Each contains

1. chairs
2. desks
3. filing cabinets

Conference Room

See Chapel and Library below

Medical and Health Facilities

Infirmery

area not definite

Contains

1. 35 beds
2. equivalent amount of hospital equipment

Nurse's Station

Contains

1. desk
2. chairs
3. examination couch
4. cabinets
5. sink

Toilet and Bath areas -- men's, women's -- 150 sq.ft.ea.

Contain

men's

1. water closet
2. urinal
3. lavatory
4. bath tub

women's

1. water closet
2. lavatory
3. bath tub

Doctor's Office

400 sq. ft.

Contains

1. desk
2. chairs
3. cabinets
4. bookshelves
5. examination couches

Dentist's Office

350 sq. ft.

Contains

1. desk
2. chairs
3. cabinets
4. dental chair and equipment

EKG and BMR

400 sq. ft.

Contains

1. electrocardiogram equipment
2. basal metabolism rate equipment
3. desk
4. chairs
5. couches
6. cabinets
7. lavatory

Therapy 475 sq. ft.
Contains
1. desk
2. chairs
3. cabinets
4. therapy equipment

X-Ray 475 sq. ft.
Contains
1. X-Ray equipment
2. development equipment
3. couch
4. lavatory
5. water closet

Laboratory 400 sq. ft.
Contains
1. desk
2. chair & stool
3. cabinets
4. laboratory equipment

Waiting Room 250 sq. ft.
Contains
1. chairs
2. couches

Services and Mechanical

Kitchen 1700 sq. ft.
Contains
1. all necessary kitchen equipment
2. dietician's office
a. desk
b. chairs
c. cabinets

Storage -- residential, institutional -- 2500 sq.ft.
Contains
1. shelves
2. cabinets

Mechanical 2000 sq. ft.
Contains
1. heating equipment
2. ventilating equipment
3. electrical systems
4. water pumps & pressure tanks
5. hot water storage tanks

Maintenance and Shipment 400 sq. ft.
Contains
1. work bench
2. tool cabinets

Staff Dining and Lounge 500 sq. ft.

Contains

1. tables & chairs for 15
2. lounge chairs
3. sofas

Staff Restrooms and Lockers 400 sq. ft. ea.
men's and women's

Contains

men's

1. lockers
2. water closet
3. urinal
4. 2 lavatories

women's

1. lockers
2. 2 water closets
3. 2 lavatories

Common Facilities

Dining 2000 sq. ft.

Contains

1. folding tables and chairs for 175
2. cafeteria counter
3. parking stand for canes, crutches, etc.
4. extra chairs for auditorium use

Recreation and Lounge 2000 sq. ft.

Contains

1. chairs
2. sofas
3. tables
4. game equipment
5. storage

Hobby Room 3000 sq. ft.

Contains

1. woodworking equipment
2. metalworking equipment
3. painting equipment
4. ceramics equipment
5. weaving equipment
6. sewing equipment
7. tables
8. chairs
9. storage
10. sinks

Chapel and Library 600 sq. ft.

Contains

1. inter-denominational altar
2. movable screen for altar area
3. 25 chairs, and racks
4. bookshelves
5. conference table
6. lounge chairs
7. storage

Lounges 300 sq. ft.
 Contains
 1. tables
 2. chairs
 3. sofas

Men's Club 400 sq. ft.
 Contains
 1. chairs
 2. sofas
 3. small tables
 4. table games

Laundry 300 sq. ft.
 Contains
 1. 2 laundry sinks
 2. 2 washers
 3. 2 driers
 4. tables
 5. chairs

Barber and Beauty Shop 400 sq. ft.
 Contains
 1. barber chair, cabinet & equipment
 2. beautician's chair, cabinet & equipment
 3. 2 lounge chairs

Halls, Stairs, Elevators approx. 20,000 sq. ft.

Guest Rooms

2 Guest Rooms 230 sq. ft. each
 Each contains
 1. sleeping area
 2. bathroom

Living Areas

Proximate
 Contains
 15 units, 500 sq. ft. each
 to include sleeping area, bathroom, living-dining area, kitchenette
 each unit occupied by one person

10 units, 800 sq. ft. each
 to include bedroom, bathroom, living-dining room, kitchen
 each unit occupied by one couple

Congregate
 Contains
 30 units, 230 sq. ft. each
 to include living-sleeping area and bathroom
 each unit occupied by one person

Congregate (cont.)

85 units, 300 sq. ft. each
to include sleeping dressing area, living
area, bathroom

80 units occupied by one person, 5 units
occupied by one couple

30 units, 400 sq. ft. each
to include sleeping-dressing area, living
area, bathroom

15 units occupied by one person, 15 units
occupied by one couple

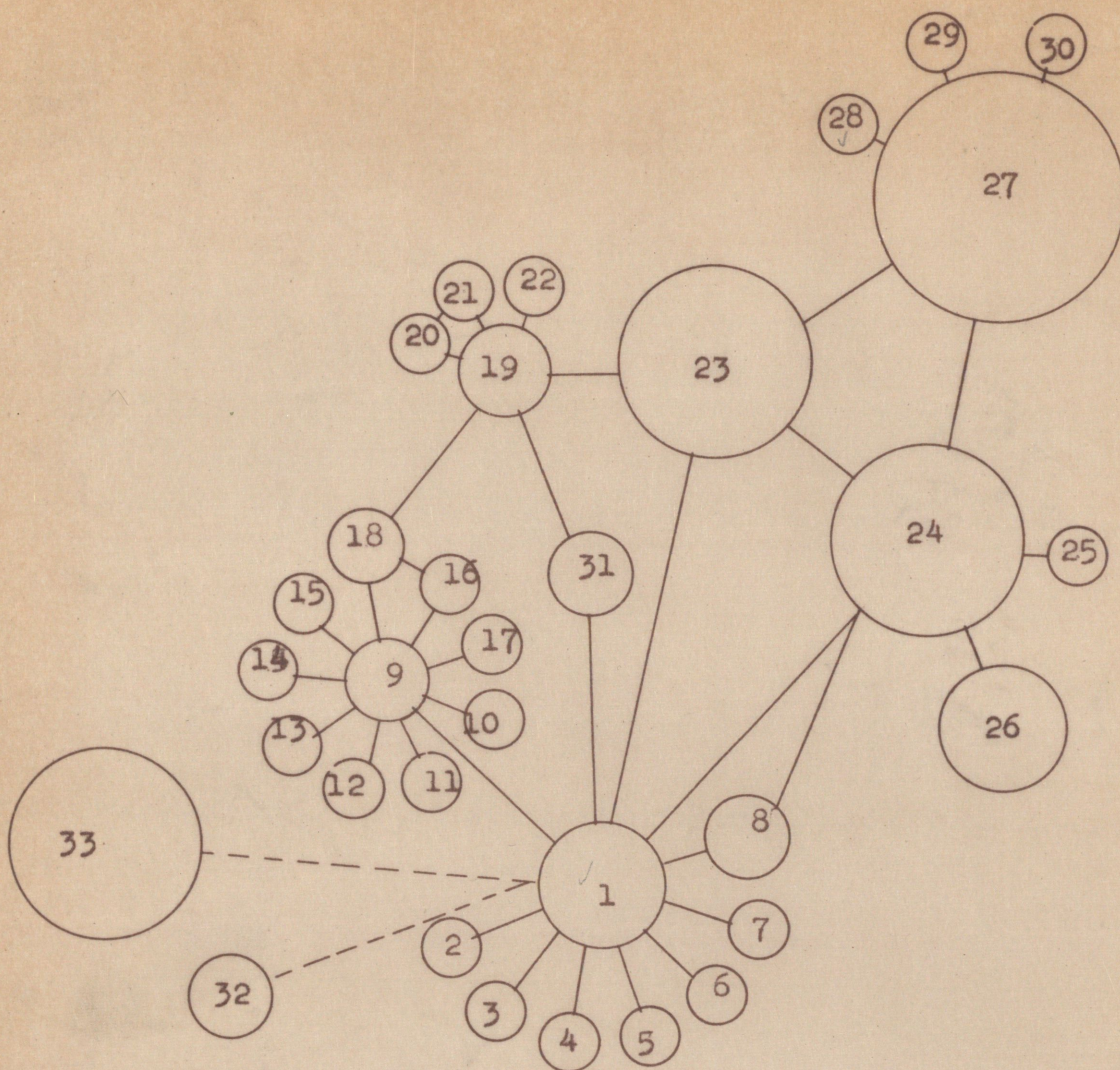
Garages or Carports

Spaces for 50 cars approx. 10,000 sq. ft.

Area Totals

Rentable Space (living areas) 59,900 sq. ft.

Non-rentable Space (common, administrative,
and service areas, and allowance for
design flexibility 40,100 sq. ft.



FLOW DIAGRAM

- | | | |
|----------------------|----------------------------|------------------------|
| 1. Lobby | 11. Doctor | 23. Dining |
| 2. Reception | 12. Therapy | 24. Recreation |
| 3. Administration | 13. X-Ray | 25. Men's Club |
| 4. General Office | 14. Laboratory | 26. Hobby Room |
| 5. Guest Room | 15. Nurse's Station | 27. Congregate housing |
| 6. Restroom | 16. Bath and Toilet | 28. Lounges |
| 7. Beauty and Barber | 17. Eng and BMR | 29. Laundry |
| 8. Conference | 18. Infirmary | 30. Storage |
| Library | 19. Kitchen | 31. Mechanical |
| Chapel | 20. Staff Dining | 32. Garages |
| 9. Waiting Room | 21. Staff Lockers | 33. Proximate housing |
| 10. Dentist | 22. Shipping | |

**Aesthetics
and Amenities**

AESTHETICS AND AMENITIES

Introduction

Aesthetics is an abstract concept. As such, it is subject to each individual's taste and appreciation, and cannot be strictly defined. Therefore, in this section we must discuss general characteristics, rather than go into description of details.

Outlook of the Aged

In many ways the outlook of the aged is different from that of most other people. Their mental and physical faculties may be reduced. They may also be less flexible and adaptable than younger people. They may be emotionally more sensitive to and more easily influenced by their surroundings.

They often feel lonely and left out of things and may be easily depressed. They need company, useful and pleasant pastime, and cheerful and interesting surroundings. In spite of their need for company, their need for privacy when they want it is as great as, if not greater than, at any other time in their lives.

The largest part of their lives, including their most productive years, is over. They are getting older, and they realize this is inevitable. Increasing physical impairments may remind them of this. They don't want to live in surroundings that accent this fact of their lives.

Aesthetics of the Locale

The aesthetic value of any project is concerned with more than just the buildings and the site development. The view from the site and the general character of the area are also important. The view from the site of Paradise Valley Retirement Community is inspiring. On the east stand the majestic peaks of the Absaroka Mountains. To the west rise the gentler ridges of the Gallatin Range. The sweep of Paradise Valley opens to the south. The Yellowstone River winds northward down the valley and passes just west of the site with its open water, gravel bars, and tree-lined banks.

The development of the site, including landscaping, buildings, and all other developments, must fit into these surroundings. It must adapt to the contours of the site and the immediate area, and must absorb and reflect the character of the whole valley, yet it must neither compete with its surroundings, nor blend into the site so much as to become insignificant.

Aesthetics of the Buildings

One of the primary aesthetic considerations in a retirement community is to avoid an institutional atmosphere. The design should create a domestic effect. The color scheme should be warm and pleasant. It is necessary to avoid drabness and institutional sterility of color on the one extreme, and

offensively bright and garish colors on the other. Warm and natural materials such as wood and natural stone should be employed wherever possible to avoid a cold, institutional appearance such as would be given by extensive use of such materials as metal and concrete. Furnishings in common areas should be as home-like as possible to avoid an institutional look.

The design should allow for natural light, a good view, and a feeling of openness -- again to avoid a closed-in, institutional atmosphere. This is especially important in living areas, in dining areas, and in lobby, lounge, recreation, and other areas for relaxation. Hominess can be achieved also by scaling all facilities, even common areas, to the individual. This would give each person a feeling of having a personal home, rather than making him feel like an insignificant member of a large group.

Finally, it is very important that the community be well designed to give each resident a feeling of affection and pride for his home.

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CONCLUSION

At the time I wrote this thesis report, I had only a general idea of what the final design would be. The written report dealt mainly with requirements and considerations, and was from an objective point of view. Since I finished this report and began work on the design problem several points have come up which were not apparent to me until I got an inside view of the problem.

The most obvious development came as a combination of design aesthetics and functional purpose. This was the design of the community center as seven interconnected units, one for each functional area, rather than as one large building. Among my reasons for choosing this type of design were wishes for an interesting design, for the use of intervening open spaces and separation of function while retaining a sense of unity, and for maintaining a balance and a continuity of plan with the living units. One of the main factors was my wish to separate the infirmary slightly from the rest of the center to keep it from seeming to be the principal function of the center, and yet to keep it from being the dominant mass from the exterior view.

There are several small points in the design which do not conform exactly to the written report. The report calls for garages or carports. I did not include these in my design or plot plan, but they could be added as needed in any of several convenient areas. I added a lounge in the infirmary for the use of ambulatory in-patients. I put the guest rooms in the administrative unit of the center. For design and functional convenience I moved the cafeteria facilities more into the kitchen area than the dining area. In order to divide the proximate living units evenly into tri-plexes of double units and four-plexes of single units, I changed the number of units from 15 single and 10 double units to 16 single units and 9 double units.

Except for these few points, the design problem follows quite closely the written report.

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