

THE IMPACT OF ENVIRONMENTAL CHARACTERISTICS UPON
THE WELL-BEING OF RURAL ELDERLY TENANTS IN
A FEDERALLY ASSISTED HOUSING PROJECT

by

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A MASTER'S THESIS

submitted in partial fulfillment of the

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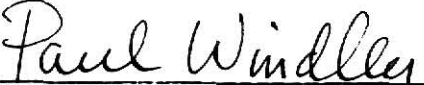
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CHAPTER I

INTRODUCTION

An important consideration in the design of housing for the elderly is the impact the physical environment will have upon the well-being of the residents. The elderly person's home is where a large portion of their time is spent, and its functional design can either help or hinder an individual in his/her attempts to enjoy life. This study is concerned with the relationship between seven selected physical characteristics of a rural housing project for the elderly and the tenants' well-being. The seven physical characteristics to be studied include: 1) condition of the environment, 2) security measures, 3) environmental barriers, 4) environmental manipulation, 5) availability of social services on site, 6) availability of social services off site, and 7) time/distance/location of services. The intent is to better understand how and when the physical environment can influence the rural elderly person's well-being. The following broad hypothesis was formulated: environmental characteristics affect successful adaptation to aging as reflected in the older person's well-being.

Because specific design criteria for rural and small town elderly are largely lacking, it is hoped that this research will provide insight into the unique needs of this user group.

Related Research

The Concept of Well-Being

The general problem of environmental impact upon human behavior and well-being has been studied by many, (Hall, 1959, 1969; Sommer, 1969;

and Proshansky, Ittleeson, and Rivilin, 1970). Only within the last decade have gerontologists and other researchers seriously begun to extend these basic concepts and apply them to the elderly. Several researchers have found an association between indices of well-being and environmental living conditions. Frances Carp (1967) in her now classic study of Victoria Plaza asked whether the elderly persons well-being can be changed by altering the environments in which they live. Carp's study was made on applicants for occupancy of a newly-built senior center high rise apartment complex. These people were measured in a variety of areas presumed to be related to their well-being. She compared applicants who became tenants with unsuccessful applicants. Each group was assessed prior to and after the successful tenants had moved into the building. The study revealed very few differences between groups before the move, but found dramatic evidence of improved outlook and well-being among the residents who moved to the new housing when compared with those who remained in the old community.

Many social scientists have used the concept of well-being to assess the quality of life among the elderly (C. F. Havinghurst, 1963; Bradburn, 1969; and Riley and Foner, 1968).

More recently, M. Powell Lawton (1974, 1975) has established eight behavioral characteristics indicative of resident well-being. These eight indices: friendship in housing, housing satisfaction, life satisfaction, mobility, family contact, activity participation, functional health, and fearfulness have been tested and found to be highly reliable measures of tenant well-being among urban elderly. Lawton and Cohen (1974) used these indices of well-being to test the impact of new housing on the well-being of elderly tenants during their first year as residents. The

findings of their study of five housing projects were very consistent with Carp's findings at Victoria Plaza. The new housing residents when compared to residents which had remained in the old community scored significantly better on five well-being factors, poorer in functional health, and not different on three other indices.

Using these same measures of elderly tenant well-being, Lawton, Nahemow, and Teaff (1975) tested 2,457 subjects from 154 federally assisted housing projects. They examined the relationship between four selected physical characteristics of planned housing environments and tenant well-being. The physical characteristics studied were: sponsorship, community size, building size (number of dwelling units) and height of building. Private nonprofit sponsorship was associated with higher friendship scores, greater housing satisfaction and greater activity participation. Housing satisfaction was greater in projects that were smaller in terms of total number of units. Greater height of building was associated with lower housing satisfaction and less mobility.

The present study is essentially an extension of Lawton's studies of environmental impact on the well-being of elderly tenants in federally-assisted housing projects. It uses Lawton's tested indices of well-being to assess the well-being of rural elderly tenants. The seven environmental characteristics studied were selected after first becoming familiar with the housing project under investigation. Many researchers have attempted to define the physical environment into dimensions that could be used to study how the environment affects behavior, but no replicable list of dimensions currently exists. Like most of the studies reviewed, the environmental variables used in this investigation were selected based on the specific characteristics of the housing project and its special user group.

Environmental Characteristics

In search of environmental indices which would describe the housing project under investigation, studies dealing with the physical environment and the aged were reviewed. Schooler (1970) interviewed 4,000 non-institutionalized elderly persons and found that morale is directly dependent on physical aspects of the environment. The five environmental characteristics measured by Schooler included: distance to facilities; condition of dwelling unit; convenience to services, friends, and relatives; characteristics of the structure; and availability of social services.

Nahemow and Kogan (1971) dealt with the problem of describing the environmental support system of older persons in the city. Their efforts resulted in the specification of a core group of services that must be present within walking distance (three to six blocks) in order for the neighborhood selected to be a viable setting for elderly housing. The following services were found to be the minimum neighborhood services needed: bus stop, grocery store/supermarket, drug store/variety store, bank, post office, and church. In cities where inexpensive public transportation was not available the list of critical services was expanded to include the following: medical hospital, library, senior club/senior center, dry cleaners, public park, and luncheonette/snack bar.

Architect Louis Gelwicks & planner Robert Newcomer in their book, Planning Housing Environments for the Elderly, outline twenty-six design directives which they believe are of major importance in the creation of housing which will contribute to the maximum physical and mental functioning of older persons. These directives were developed from a synthesis of current findings in gerontological research and practice and an analysis of the expressed desires and needs of sample populations of older persons they interviewed in various parts of the country.

Based on these studies and the special characteristics of the housing project under study, seven dimensions of the environment were derived. The seven physical characteristics studied include: 1) condition of the environment, 2) security measures, 3) environmental barriers, 4) environmental manipulation, 5) availability of social services on site, 6) availability of social services off site, and 7) time/distance/location of services.

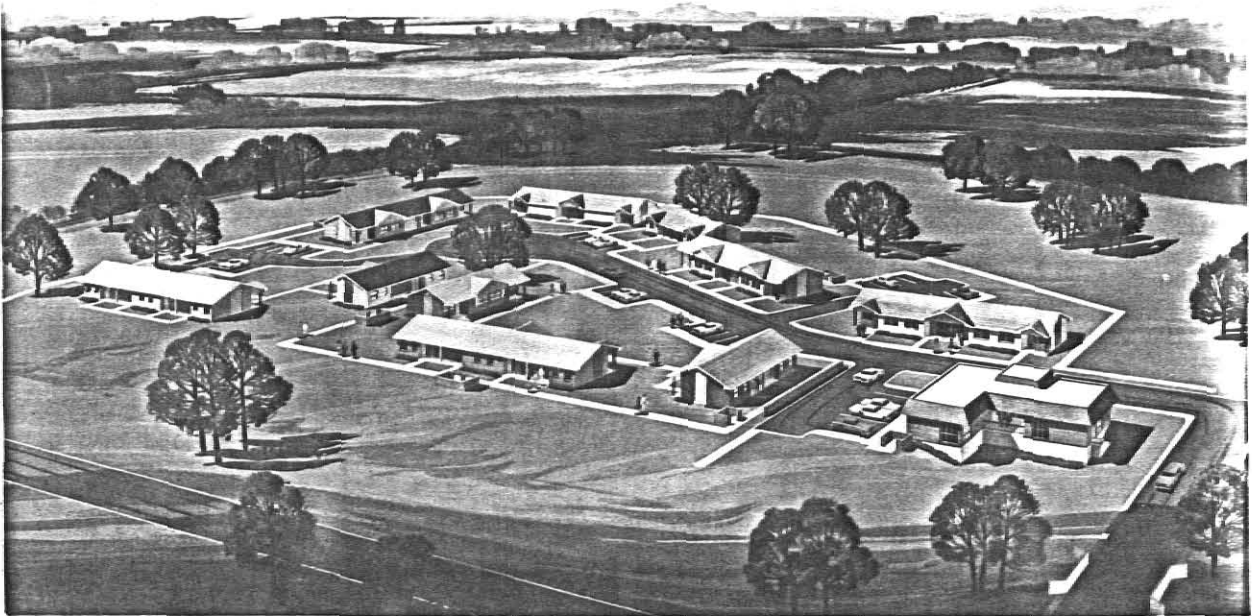
These environmental factors used were hypothesized to be important design principles that contribute to the older persons well-being. It was anticipated that the data would point to significant areas where environment and well-being interact. This information could greatly aid architects, administrators, and other policy makers in producing a physical setting. The objective being to provide a setting more capable of maintaining quality of life in old age. Evaluative evidence of how and when the physical environment can influence the rural elderly person's well-being is needed for improving existing and future housing facilities for the elderly.

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CHAPTER II

DESCRIPTION OF NORTHVIEW HOUSING



Northview Housing is a housing project located in Wamego, Kansas. It was developed with federal assistance and designed for elderly people with limited incomes. The project, was opened for occupancy in July 1971 and consists of 32 units of fourplex row housing. The units are a mix of 12 bachelor apartments, 18 one bedroom apartments, and two two bedroom apartments.

The city of Wamego, Kansas, is defined by the Bureau of Census as a "small rural" community having a population of 2,790 people. It is referred to by many people as a bedroom city. The basic reason for this is because it is within convenient commuting distance from the metropolitan

area of Topeka, the college city of Manhattan, and the United States Army Fort Riley Military Reservation. The two largest segments of the city's population are those between five and fourteen years of age, and those over 65. Each group represents 18 percent of the total population. Data compiled for Wamego and Pottawatomie County reveal a trend indicating that young people upon completion of their schooling are migrating out of the area entirely. Older rural residents tend to remain on the farm until reaching retirement age. Upon retirement they typically move into small communities such as Wamego.

Northview Housing is Wamego's first attempt to provide needed housing for its senior citizens. The building site selected was not initially considered an ideal site for elderly housing because of its location on the far northern outskirts of Wamego. Other more desirable sites located closer to the downtown shopping area were either not available or within the project budget. Due to time constraints for federal funding the existing site was selected.

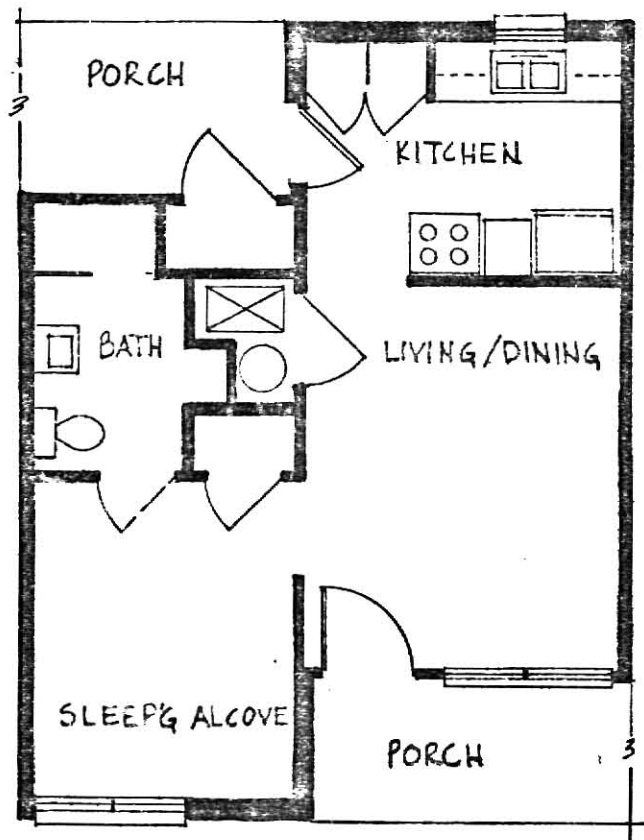
The site is somewhat remote and was surrounded until recently by pasture land on the north and U.S. Highway 24 on the south. The one story fourplex row houses have brick facades with private front and rear entries.

Typically, the floor plan of the small bachelor or efficiency apartment provides entry into the living/dining room. The sleeping alcove is adjacent to the living room. There is no door separating the two rooms. Space allotment allows for only a single twin size bed.

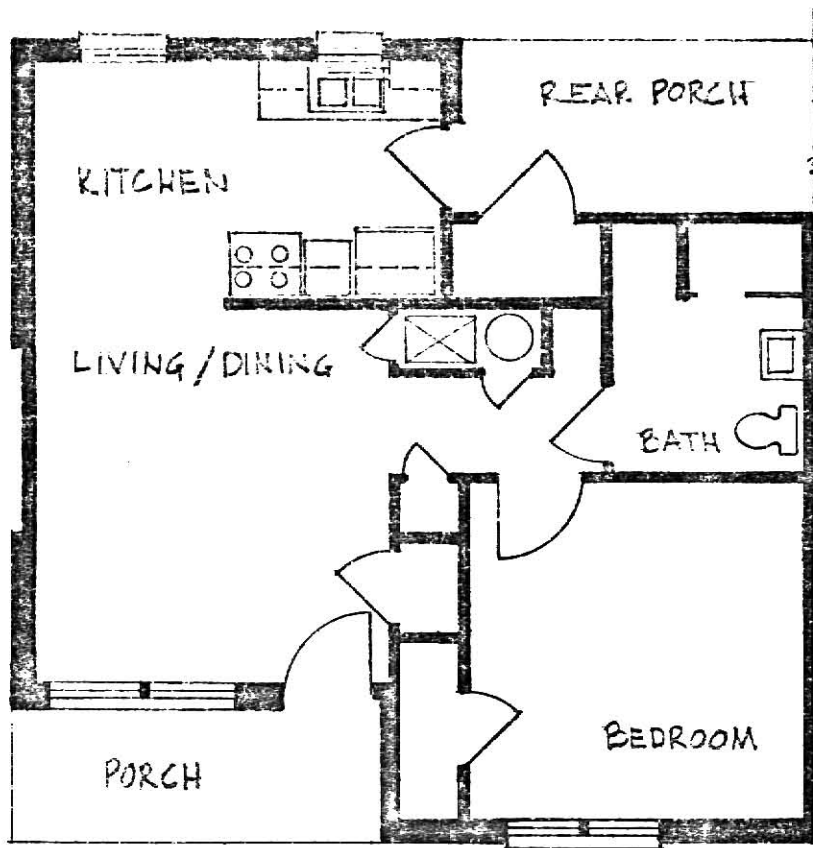
The small kitchen is at the opposite end of the unit with the kitchen connecting the living/dining space. The kitchen work space is organized in a parallel scheme.

The one bedroom unit is similar in plan to the bachelor apartment but slightly more spacious and has a separate bedroom. A small hallway connects the living room to the private bedroom and bathroom. The kitchen work areas are similar in size to those in the bachelor quarters. The one bedroom unit does have a small dining area adjacent to the kitchen.

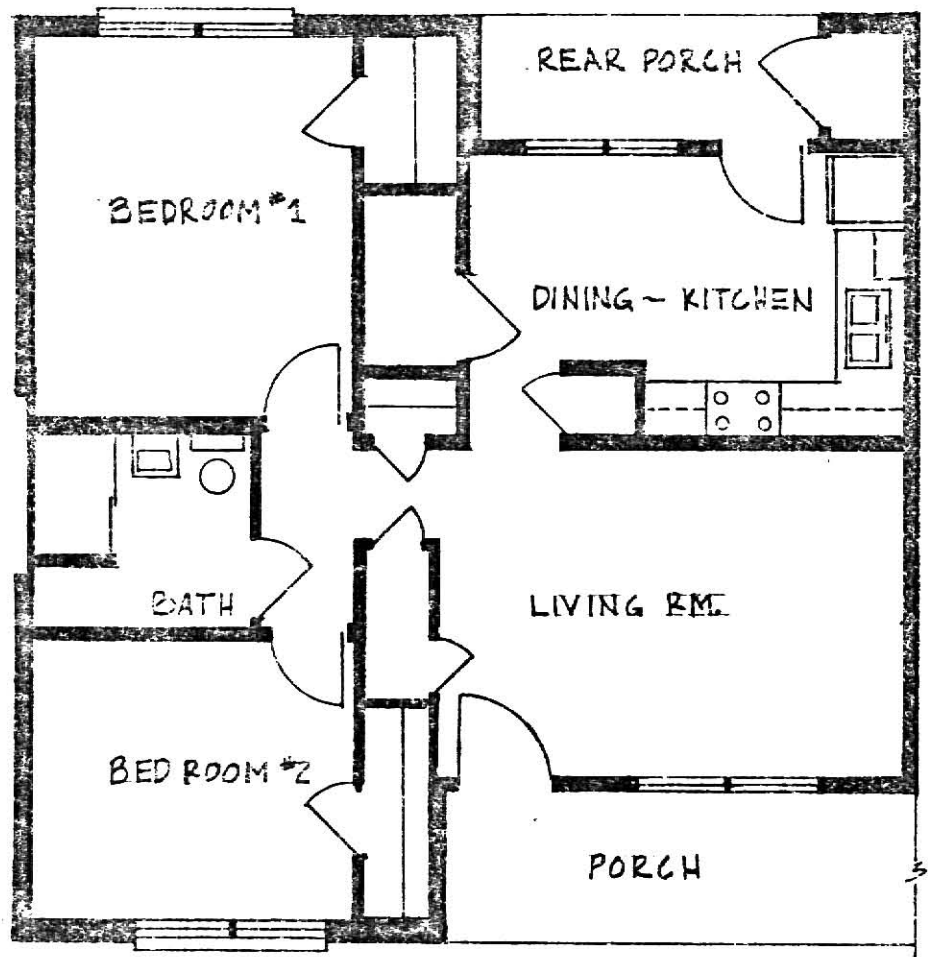
The two bedroom units are overall much more spacious. The additional space includes a separate living room, two separate bedrooms, and an L-shaped kitchen work space and dining area.



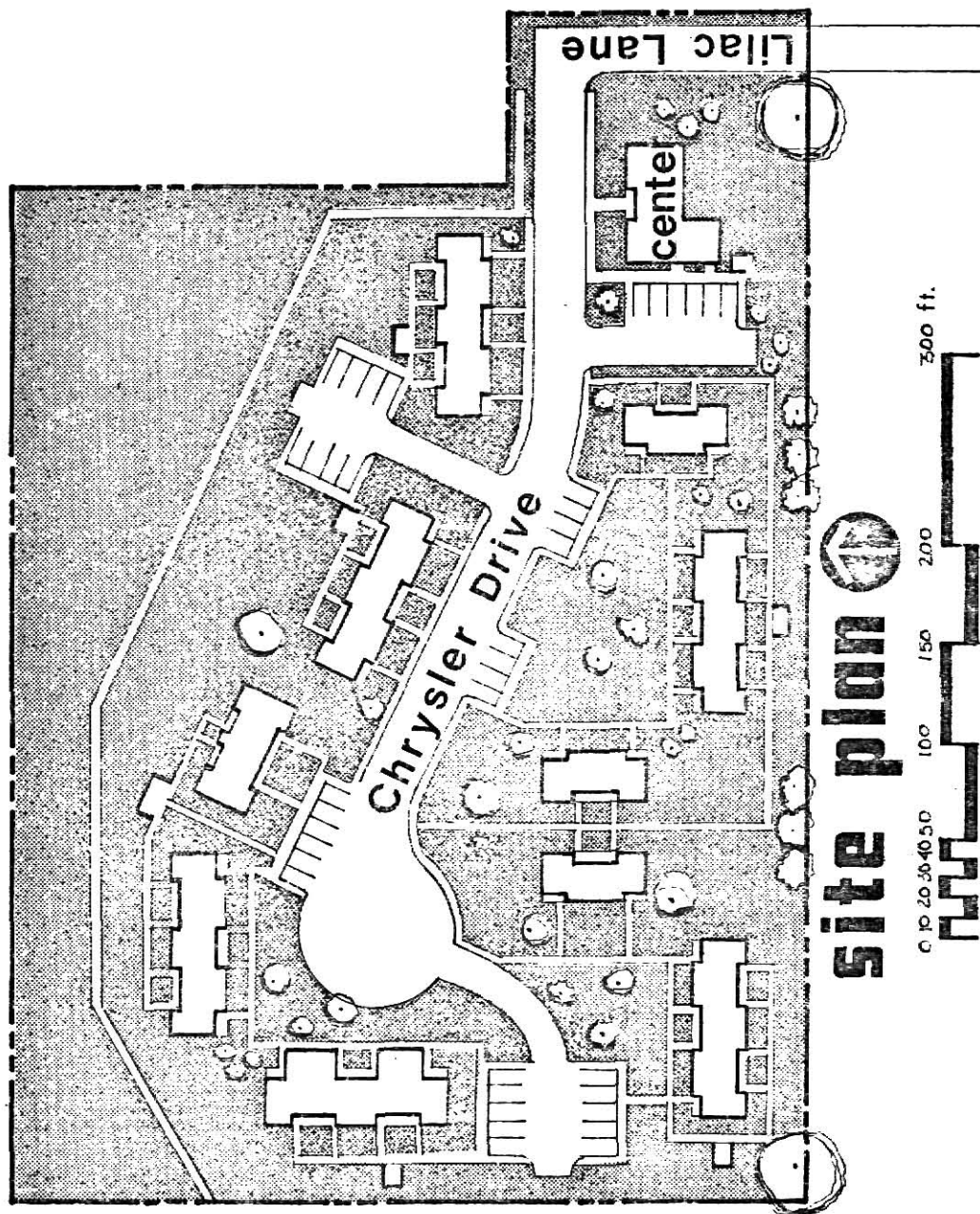
**Bachelor
Apartment
420 sq.ft.**



One
Bedroom
548 sq. ft.



Two
Bedroom
768 sq. ft.



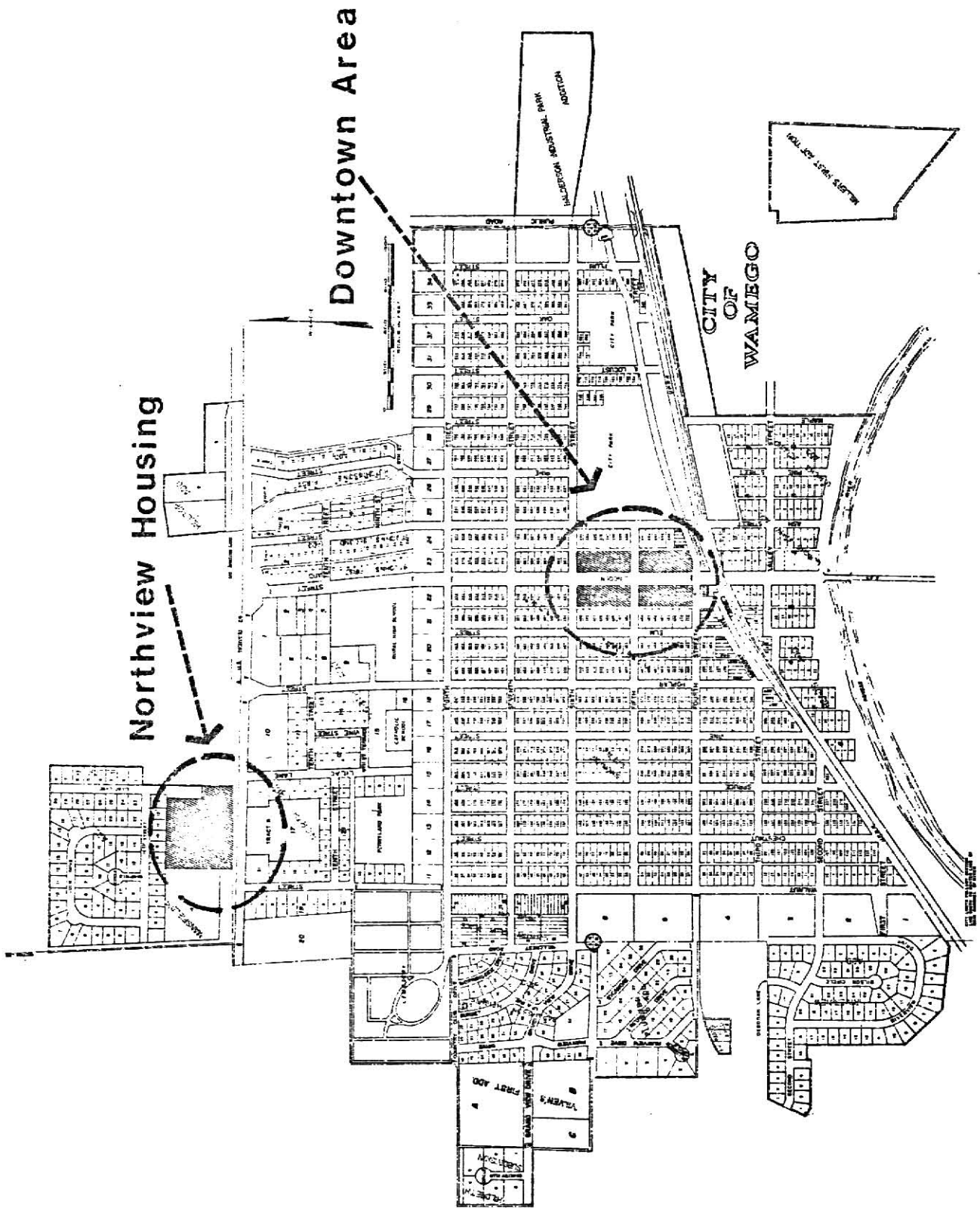
site plan

U.S. Highway 24

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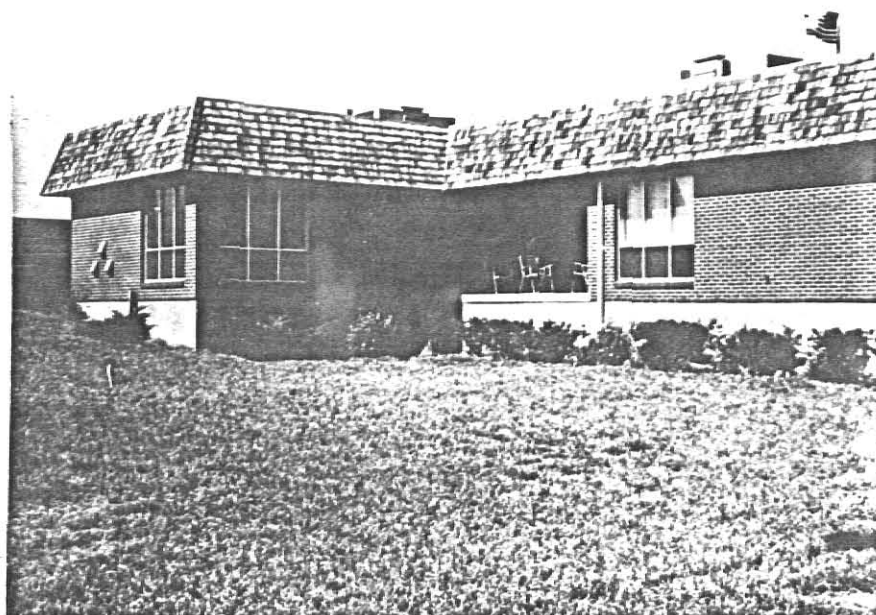
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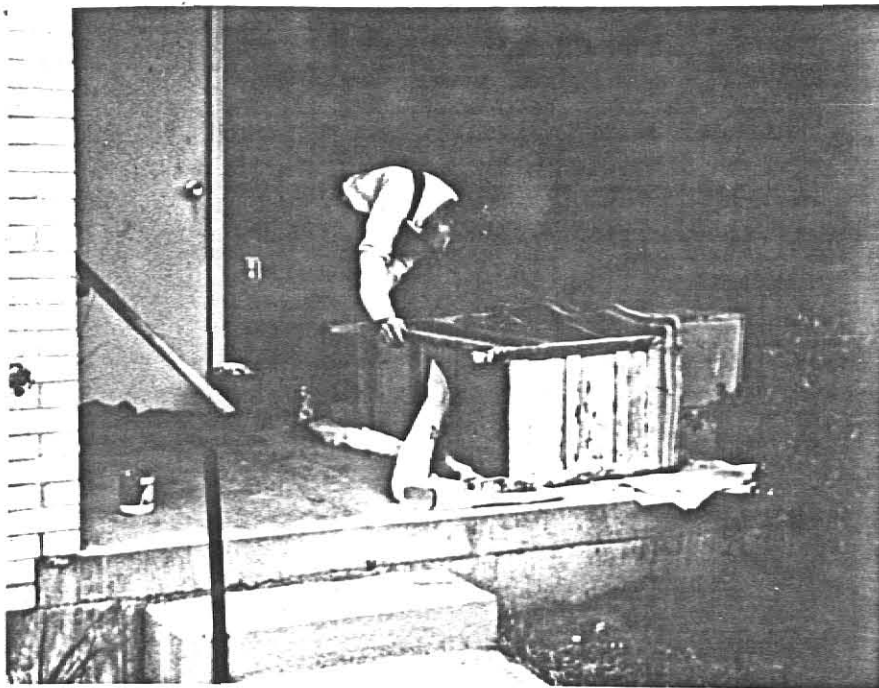
View of Northview housing from the Southwest. U.S. Highway 24 separates Northview from the city of Wamego.



The Community Building houses the multipurpose room with kitchenette, mail boxes, laundry room, rest rooms, and director's office.



Northview is well lighted with tenant parking located close to each apartment complex.



The back porch is larger than the front porch. The residents more frequently personalize and use their back porch than their front porch. Back porches were used for storage, drying clothes, potting flowers, refinishing furniture, and sitting and watching.

CHAPTER III

METHODS AND PROCEDURE

Sample

The sample consisted of 32 elderly residents of the Northview Housing Project, Wamego, Kansas. The 32 senior citizens represented the entire population residing in the 32 unit facility at the time of this investigation. Two apartments were vacant during the interview period and two residents were hospitalized and unavailable for questioning.

Data Collection

Permission to interview tenants was obtained from the housing authority without difficulty. All subjects were first contacted while attending a pot luck dinner at the community center. The purpose of the study was explained and interview times were arranged. Residents were interviewed in their own homes. Each personal interview lasted from 60 to 90 minutes. All questions used had been pre-tested with a sample of 15 rural elderly persons not included in this study.

Well-being and environmental indices were measured through use of the questionnaire. In addition, much of the environmental data was collected by observation. A "walkabout" procedure proposed by Howell (unpublished) was used to record the observations. The physical characteristics of typical dwelling units, neighborhood, and the community were also documented with color slides as well as black and white prints and these were used for illustration in this manuscript.

Data for the study were collected during the period of May, 1975 to November, 1976. During the first stages of the investigation, physical

data on the facility were collected and the administrator and three housing authority members were interviewed. The purpose of these interviews was to learn why the housing project was initiated; what the project goals and objectives were; and to understand the current management policies and long range plans. The "Turnkey Developer" and architects were out-of-state and unavailable for questioning.

Later observations and data were recorded through "participant observation." All regularly scheduled activities such as the Northview Card Club, "Sunday sing along," "mail time," pot luck dinners, county nurse visits, gardening, and Bible study were attended. Each area where residents congregate or where services were provided was observed. This data provided insight as to how the tenants used the physical environment.

Operational Definitions

Well-Being Indices

A sense of well-being is defined as a feeling of comradeship; being needed; secure and self respecting along with a feeling of competence within the realm of ones responsibilities. Based on the previous works of M. Powell Lawton (1974, 1975), ten items that were considered to be particularly important to the well-being of older people were measured through the use of the questionnaire (see Appendix I). The well-being variables examined in this study include:

1. Friendship in housing - The number of people (other than relatives)



that the person considers a friend as well as frequency of contact with those individuals and where such interactions took place.

Representative questions are: How many people in the housing project do you consider very good friends? How often do you contact the friend you see most often?

2. Neighborhood Satisfaction - Desirability of the residential setting



and the degree to which the person enjoys living in the neighborhood. Sample questions are: How much do you like living in this neighborhood? If you could live anywhere you wanted, where would you prefer to live? How much do you like living in this house?

3. Mobility - How often the occupant frequents other areas of the



neighborhood and community. Also the mode of transportation he/she uses to get from one place to another. Sample questions: How often do you go out doors in warm weather? About how often do you leave this neighborhood? Do you now drive an automobile?

4. Life Satisfaction - The general emotional state of the individual.



The degree of happiness and the problems of sadness related to aging. Sample questions are: As you grow older do things seem better than you thought they would be?

5. The Family Contact - Frequency of contacts with relatives by personal



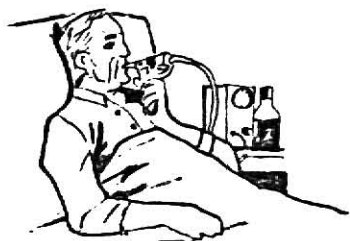
visits, telephone, and written correspondence. Representative questions: Which relative communicates with you most often? How important is it to you that you have frequent contact with your family?

6. Fearfulness - Persons attitude about feeling safe from environmental



hazards and being potentially victimized in the home, neighborhood, and community. Sample questions are: Do you feel that your personal belongings in your home are safe during your absence? Do you feel unsafe in this neighborhood?

7. Health - The self perception of health. Representative questions:



In general, how would you rate your health at the present? Compared to other people your own age, would you say your health is better than, the same as, or worse?

8. Activity Participation (on site) - The number of on site activities

which the occupant participates in. Sample questions: Name of activity; frequency of attendance; and perceived distance from home.

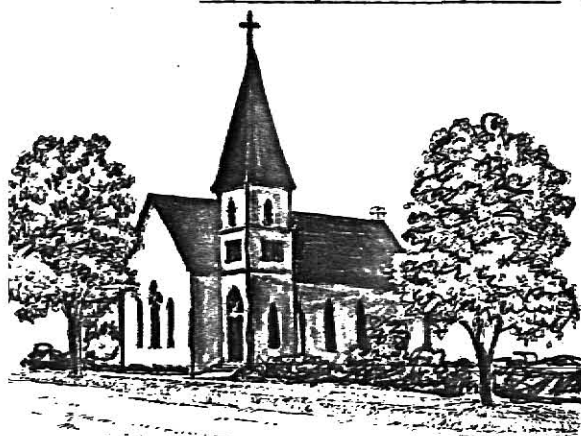


The organized activities available to all residents include: The Northview Card Club; Sunday song fest; gardening; pot luck dinners; Bible study; and daily "mail time" gathering.

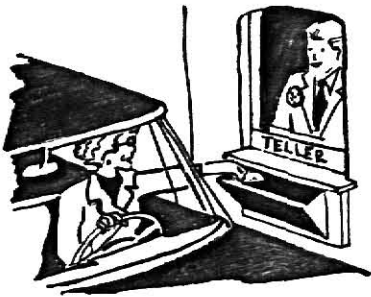
9. Activity Participation (off site) - The number of organizations and

other activities the resident participates in outside of the housing neighborhood.

Sample questions: Activity, frequency of attendance; perceived distance from home; and mode of transportation.



10. Financial Security - Involves a feeling that ones financial status



is such that he/she personally feels that they are able to acquire the basic needs for a quality of life without fear of reaping huge debts and financial crisis. Financial security also involves a feeling within ones self that the location and quality of housing that they presently have is at a level that they had hoped to obtain while still working. Example questions are: Does the cost of this housing place a heavy burden on your income? Do you feel that this housing is worth the money you pay?

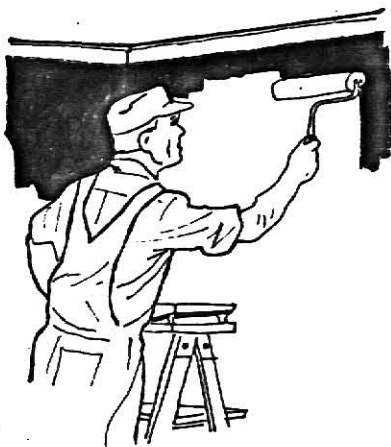
Well-being scores were tabulated by weighing each question response and summing all responses for each of the ten items measured, the higher each variable score, the more desirable the variable was (see Appendices I and II). For example, if one individual received a score of 12 for friendship in housing, and another individual received a score of 6, then the individual with the higher score had more friends and more frequency contact with friends within the housing, therefore, he/she had a higher state of well-being.

Environmental Factors

Environmental living conditions are those physical characteristics which when properly designed and utilized enforce a persons sense of

well-being. Like the well-being indices, the seven environmental factors selected were measured through use of the questionnaire. Environmental factors were similarly tabulated by weighing each question response for each variable the higher the variable score the more desirable the factor was (see Appendices I and II). The environmental factors examined in this study are defined as follows:

1. Condition of the Environment - This dimension of the environment is



concerned with the state of repair of the housing and availability of service to assure proper maintenance. Representative questions include: Do you feel that the outdoor area of this housing project is well groomed and attractive? Are you satisfied with the snow removal in this housing vicinity?

2. Security Measures - Those steps taken to assure safety of the



individual. Sample questions: Do you feel that this housing is adequately lighted and patrolled? Do you feel personally safe within the immediate area of your home?

3. Environmental Barriers - The degree to which the behavior of the residents is altered, inhibited or markedly restricted due to certain physical restraints.



Sample questions: Are there any architectural barriers that you have noticed in your home? Have you had any accidents while living here?

4. Environmental Manipulation - Rules and policies governing the use of space by the residents and the degree to which the environment allows choice of alteration. Sample questions: Do you have adequate room and storage for your belongings? Are there any rules or policies concerning the use of your home or surrounding grounds that you would like to see changed?



5. Availability of Social Services (on site) - Frequency of use of the



services and activities provided with the housing project. These services include: The mobile library; the meals on wheels; monthly visits by the county nurse; laundry facilities; and mail box.

6. Availability of Social Services (off site) - Frequency of use and



perceived distance of the services and activities necessary to promote the social welfare of the aged. Examples are: Grocery store, beauty parlor, nursing home, and clinic.

7. Time/Distance/Accessibility of Services (off site) - General

accessibility: Walking distance, by private auto and public transportation, individual effort required. Sample questions are: How would you describe the downtown shopping area, very convenient, convenient or not convenient? Do you find it difficult or unusually time consuming to take care of your shopping and utilization of other services?

CHAPTER IV

RESULTS AND DISCUSSION

The Subjects

The study sampled 32 subjects, 26 females and 6 males. Age of the respondents surveyed ranged from 55 to 94 with a mean age of 74. Only six per cent (2) of the respondents were 65 years or younger, while sixty-five per cent (21) were 70 years and older. Fifty-nine per cent (19) were widows or widowers. All participants interviewed were ambulatory and coherent. The subjects were all white and considered by national standards as low income citizens. The mean rent payment was \$57.81 per month, the amount charged for rent represented approximately one fourth of the total average monthly income. The mean annual income of the residents interviewed ranged between \$2,500 - \$3,000. All but two of the residents had living relatives residing in the Wamego Community. One had no living relatives and the second had a daughter living approximately thirty miles away. The majority of the residents, sixty-five per cent (21), did not drive an automobile and depended upon friends and relatives for most transportation needs. Wamego does not provide public transportation or taxi services. Two of the tenants held part-time jobs and four residents earned extra money by doing small odd jobs such as sewing, cooking and cleaning. The average length of residence for the project tenants was three years. Additional demographic characteristics are provided in Tables 1 and 2.

Table 1
Demographic Characteristics of Interviewed Subjects

	Number of Tenants	Percentage
Marital Status		
Divorced	2*	6.25%
Single	3	9.38%
Widowed	19	59.33%
Married	8	25. %
Sex		
Female	26	81.25%
Male	6	18.75%
Race		
White	32	100. %
Apartment size		
Bachelor	11**	34.38%
One bedroom	18	56.25%
Two bedroom	3	9.38%

*Example: 2 tenants were divorced.

**Example: 11 tenants lived in bachelor apartments.

Table 2
Demographic Characteristics of Interviewed Subjects

	Mean	Standard Deviation
Age	74 years	7.870
Length of Residence	35.531 months	17.796
Monthly Rent	\$57.81	11.397

Well-Being of the Tenants

Table 3, includes the mean score and standard deviation of each well-being index for all of the 32 residents interviewed. The groups degree of well-being appeared to be fairly homogenous for the following indices: neighborhood satisfaction, mobility, life satisfaction, family contact, fearfulness, health, and financial security. The tenants varied to a greater degree on the indices of friendship in housing and activity participation on and off site.

Table 4, includes the product moment correlation among the well-being variables measured. These correlations suggested that the indices were for the most part independent of each other and were most likely measuring different facets of well-being, with the exception of mobility and activity participation (on site).

1. Activity Participation (on site) and Mobility

The positive relationship between these two indices suggested that highly mobile elderly tenants participated in more on site activities. When a person was confined or largely confined to their quarters it was much more difficult for them to be involved.

Demographic Characteristics and Well-Being

Demographic characteristics of the sample were evaluated to determine if they might have an influence on the well-being of the residents.

Table 5, includes the product moment correlation between the demographic characteristics measured and the well-being indices. The findings revealed the following correlations:

Table 3
Distribution of Scores Among Indices of Well-Being

Well-Being Indice	Mean	Standard Deviation
Friendship in Housing	15.38	8.30
Neighborhood Satisfaction	6.13	1.29
Mobility	8.81	2.56
Life Satisfaction	12.66	2.01
Family Contact	5.34	1.81
Fearfulness	3.84	.44
Health	4.88	.96
Activity Participation (on site)	906.25	527.01
Activity Participation (off site)	42.33	24.38
Financial Security	10.78	2.12

Table 4
Correlations Among Indices of Well-Being
N = 32

	Friend- ship in Housing	1.00	Neigh- bor- hood Sat- isfaction	Mobility	Life-Sat- isfaction	Family Contact	Fear- ful- ness	Health	Activity Partici- pation (on site)	Activity Partici- pation (off site)	Financial Security
Friendship in Housing	1.00										
Neighborhood Satisfaction	.27	1.00									
Mobility	.36*	-.05	1.00								
Life Satisfaction	.39*	-.07	.24	1.00							
Family Contact	-.08	.15	-.18	-.02	1.00						
Fearfulness	.08	-.02	.06	.26	.11	1.00					
Health	.16	.04	.01	.25	.01	-.12	1.00				
Activity Participation (on site)	.14	.01	.47**	-.08	.10	-.18	.20	1.00			
Activity Participation (off site)	.21	-.06	.05	-.38*	.07	-.07	.11	.20	1.00		
Financial Security	.28	.20	.11	-.01	.02	-.06	.26	.25	.18	1.00	

*p < .05

**p < .01

Table 5
Correlations Among Indices of Well-Being and Demographic Characteristics
N = 32

	Friend- ship in	Neighbor- hood Sat-	Mobility	Life-Sat- isfaction	Family Contact	Fear- fulness	Health	Activity Partici- pation (on site)	Activity Partici- pation (off site)	Finan- cial Security
Age	-.04	.01	-.15	.02	.10	-.04	.31	-.30	-.01	.01
Length of Residence	.03	.16	.10	.17	-.08	.28	.37	.29	.07	-.20
Monthly Rent	.44*	.32	.30	.13	.32	.05	.04	.21	.07	.09
Apartment Size	.30	.51**	.05	-.12	-.12	-.38*	.37*	.20	.08	-.01

*p < .05

**p < .01

1. Monthly Rent and Friendship in Housing

A significant positive relationship was discovered between these two variables. Elderly residents with higher incomes tended to have a larger number of friends within the housing. While all residents of Northview Housing are considered by national standards to be low income, there appeared to be a broad range of incomes. Monthly rents ranged from \$27.50 to \$78.25 per month. Rent payment based on ones annual income provided some insight as to financial status but only partially. Following observation and visiting with the residents, it was learned that relatives within the Wamego community often supplemented the elderly persons income by bringing them food; doing their laundry, providing transportation free of charge; and giving them gifts, etc. One resident who provided rides free of charge to all friends used her son's gas credit cards to pay for gas, tires, and any other car expense.

Money enabled a person to entertain more frequently and lavishly. Residents who could afford cable T.V. often invited neighbors in to watch a movie. Those residents with larger incomes were able to participate in more social activities that required money such as eating out.

2. Apartment Size and Neighborhood Satisfaction

Those having the larger apartments were found to be more satisfied with the neighborhood in which they lived. Observations suggested that tenants in the small bachelor apartments were more crowded and less comfortable. The bachelor apartment had a single small interior closet for storage. The one

bedroom apartment, which often housed a husband/wife team, had four closets and shelving in the bathroom. Only two two bedroom apartments were available and both were occupied by mother/daughter teams. One was an elderly mother and her mentally retarded 55 year old daughter, the second was an elderly mother in her 90's who recently moved to a nursing home and a daughter in the late 60's. The two bedroom apartments have five interior closets and shelving in the bathroom.

This correlation suggested that ones immediate surroundings had an impact on his/her feelings about the entire housing neighborhood. The tenants in the small bachelor apartments felt crowded and cramped. They could not entertain others easily in their limited quarters. They may have even resented those neighbors with more space. Because these elderly residents spent a large portion of their time in their respective apartments, the apartment size was increasingly important to their overall satisfaction of the housing project.

3. Length of Residence and Health

A positive relationship between length of residence and health suggested that the healthier residents had resided in the housing project longest. A study of where people moved after leaving the Northview Housing project revealed that 53% moved due to declining health. Table 6 provides a descriptive breakdown as to where all previous tenants had moved since the opening of the housing project in 1971.

Table 6

Where Previous Tenants Moved to after
Leaving the Northview Housing Project

New location	Number	Percentage
Nursing Home	9	32%
Deceased	6	21%
Unknown	4	14%
Manhattan High Rise	3	11%
Neighboring Town	2	7%
City of Wamego	2	7%
Out of State	2	7%
Total	28	100%

] = 53%

4. Apartment Size and Health

A positive correlation was established between health and apartment size. Healthiest tenants appeared to reside in the larger apartments. When the housing first opened for occupancy, five years ago initial tenants were allowed to select the apartment they wanted. The one bedroom apartments were filled up faster than the bachelor apartments. Subsequent new residents were assigned apartments on a priority basis. First priority for available one bedroom apartments was given to married couples. Residence was based on a first come, first serve basis. Some voluntary trading of apartments between residents had occurred. One woman moved to a smaller apartment because a close friend wanted the larger, one bedroom unit.

5. Age and Mobility

A strong negative relation was found between these two variables. Older residents appeared to be the less mobile.

This was most likely due to declining health and other natural causes or old age.

6. Fearfulness and Apartment Size

A negative relationship between these two variables suggested that residents in the smaller apartments had a lower sense of security and were more fearful. All but one of the bachelor apartments were occupied by widowed females living alone. The one bedroom and two bedroom apartments were sometimes occupied by a couple or relatives living together, sharing the apartment. These findings suggested that companionship increased ones sense of security. The correlation between fearfulness and apartment size was more a psychological issue of living alone rather than a result of the physical environment.

Environmental Factors

Table 7, includes the mean scores and standard deviation of each environmental factor measured for all of the 32 residents interviewed. Group scores for the environmental factors appeared to be fairly homogenous except for the environmental factor, availability of services (off site). Measurement of this factor was based on the number of services one used and the frequency of use. The findings were anticipated because of the broad variation of tenant off site activities.

Table 8 includes the product moment correlation among environmental variables measured. These correlations suggested that the variables were for the most part independent of each other and were most likely measuring different parts of the environment, with the exception of time/distance/ accessibility of services and security measures.

Table 7
Distribution of Scores Among Environmental Factors

Environmental Factor	Mean	Standard Deviation
Condition of Environment	7.844	1.481
Security Measures	10.063	.933
Environmental Barriers	5.719	1.908
Environmental Manipulation	5.000	.935
Availability of Services (on site)	7.906	4.156
Availability of Services (off site)	365.281	348.532
Time/Distance/Accessibility of Services	8.781	1.916

1. Time/Distance/Accessibility of Services and Security Measures

A significant positive relationship was discovered between these two variables. The correlation implied that convenient and readily accessible services in a secure environment were interrelated.

Demographic Characteristics and Environmental Factors

Demographic characteristics of the sample were researched to determine if there was a relationship between them and the environmental factors under investigation. Table 9, includes the product moment correlation between the demographic characteristics and the environmental factors selected. The findings revealed one significant correlation.

Table 8
Correlations Among Environmental Factors
N = 32

	Condition of Environment	Security Measures	Environmental Barriers	Environmental Manipulation	Availability of Services (on site)	Time/Distance/Accessibility of Services
Condition of Environment	1.00					
Security	.23	1.00				
Environmental Barriers	-.17	.01	1.00			
Environmental Manipulation	.32	-.04	-.02	1.00		
Availability of Services (on site)	-.23	.23	.17	-.03	1.00	
Availability of Services (off site)	-.27	.04	.06	-.18	.20	1.00
Time/Distance/Accessibility of Services	.24	.60***	-.11	.37*	.31	.13

*p < .05

**p < .01

***p < .001

Table 9
Correlations Among Environmental Factors and Demographic Characters
N = 32

	Condition of Environment	Security Measures	Environmental Barriers	Environmental Manipulation	Availability of Services (on site)	Availability of Services (off site)	Time/Distance/Accessibility of Services
Age	.37*	.33	-.06	.24	-.20	-.33	.31
Length of Residence	.20	.24	-.23	.19	.32	-.05	.33
Monthly Rent	.17	.25	.24	.17	.21	.01	.30
Apartment Size	.27	.23	-.03	.33	.26	.01	.33

*p < .05

1. Age and Condition of the Environment

A positive relationship was found between these two variables. The older the person was, the more satisfied he/she was with the state of repair of the housing and the availability of maintenance services. The older tenant was personally less involved in the upkeep and maintenance of their home. They were more dependent on others for these services.

Northview Housing provided major upkeep and maintenance services for their residents. Occupants were required to perform personal housekeeping duties. The maintenance man was a very friendly and cooperative elderly resident of the project who would even replace light bulbs if asked.

Correlations Among Indices of Well-Being and Environmental Factors

This study was primarily concerned with the impact the physical environment of Northview Housing had upon the well-being of its elderly residents. The seven physical characteristics described in Chapter I were tabulated for each of the 32 subjects interviewed. Similarly, the well-being indices for the 32 occupants were measured. Then a product moment correlation was computed between these variables, resulting in data presented in Table 10.

1. Condition of the Environment - A positive correlation was found



between condition of the environment and the neighborhood satisfaction. An attractive, clean and well maintained housing environment appears to enhance the tenants neighborhood satisfaction. Northview Housing was observed to be very neat and

Table 10
Correlations Among Indices of Well-Being and Environmental Factors
N = 32

Environmental Factors Indices of Well-Being	Condition of Environ- ment	Security Measures	Environ- mental Barriers	Environ- mental Manipula- tion (on site)	Avail- ability of Ser- vices (off site)	Avail- ability of Ser- vices	Time/Distance/ Accessibility of Services
Friendship in Housing	.12	.21	.30	.31	.18	.08	.13
Neighborhood Satisfaction	.35*	.17	-.27	.54**	-.09	-.04	.36
Mobility	-.22	.20	.17	-.04	.50**	.44*	.08
Life Satisfaction	.06	.33	.11	.10	.23	.22	.23
Family Contact	.32	.19	-.19	-.13	-.37*	-.20	-.01
Fearfulness	.01	.02	.10	.00	-.02	-.37	-.04
Health	.32	.56***	-.19	.10	.39*	.03	.46**
Activity Participation (on site)	-.01	.21	.02	.01	.56***	.38*	.24
Activity Participation (off site)	.20	-.19	-.05	-.01	.02	-.28	-.23
Financial Security	.13	.02	-.14	-.01	.24	.34	.25

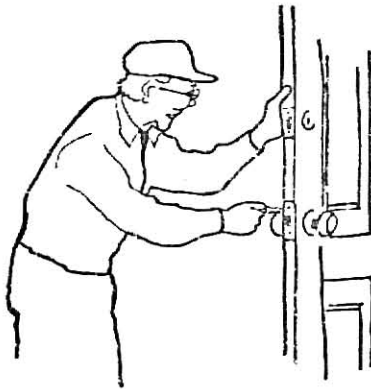
*p < .05

**p < .01

***p < .001

orderly. Ninety-one per cent (29) of the tenants believed that the outdoors area was well groomed and attractive. Some dissidents felt that the outdoor area was bare and "needed more shade trees." Eighty-one per cent (26) of the residents stated that repairs were made promptly. Residents were satisfied with the maintenance provided by the housing authority, but maintenance requiring outside assistance such as street snow removal or utilities was stated to be unsatisfactory.

2. Security Measures - A strong positive relation existed between



security measures and health. The Northview Housing had many good security design features and this appeared to have a positive impact on the tenants perceived health. The site was visually flat. As one resident described it, "I can see if a stranger is out there."

The project was also well lighted. At the start of this investigation, the housing was semi-isolated, and entirely surrounded by pasture land on the North and Highway 24 on the South.

3. Environmental Manipulation - A strong positive correlation was



discovered between environmental manipulation and neighborhood satisfaction. As evidenced by this study the ability to change and alter the housing environment in which one lives increases a persons neighborhood satisfaction. Apartments in Northview were

all unfurnished. This allowed each tenant the opportunity to equip his/her apartment with personal belongings. The housing authority had been very cooperative in giving permission to tenants requesting permission to alter and paint the insides of their apartments. One couple had been given permission to install wall-to-wall carpeting rather than area rugs. Air conditioning is not provided in the individual apartments, but many residents have installed privately owned window units. When asked which rules they would have liked changed, 9.38 per cent (3) mentioned that they would like to have a dog or cat; 9.38 per cent (3) would have enjoyed more freedom in planting flowers around their apartment; and 18.75 per cent (6) would have liked to be able to drive nails in the walls. The residents could only have plants and flowers in containers on front and back porches. All pictures, clocks, etc. were hung only with adhesive hangers rather than nails. A garden area was provided in the Northwest area of the site, but only a small portion, 18.75 per cent (6) of the residents used the garden area each summer. However, the garden provided enjoyment for all residents and food grown in the garden was shared among neighbors. Residents could add trees to the landscape when permission was attained from the housing authority. Several trees had been planted in memory of previously deceased residents. Lack of adequate storage space primarily among the bachelor tenants was the major complaint involving environmental manipulation; 43 per cent (14) residents stated that they did not have enough storage space for their belongings. Tenants residing in the one bedroom and two bedroom apartments had more square footage which allowed alternatives in room arrangement and the amount of personal belongs one could have.

4. Availability of Services (on site) - This environmental variable



correlated with four of the well-being indices: mobility, family contact, health and activity participation (off site).

A strong positive relationship was found between availability of services (on site) and mobility. When services were provided on site, mobility was high. Northview's services were primarily located in the community center. A mobile library was used regularly, at least once a month by 43.75 per cent (14) of the residents. Meals on wheels was used daily by 6.25 per cent (2) of the residents. The county health nurse visited once a month and took the tenants blood pressure, etc. 56.23 per cent (18) used this service monthly and five other residents had reported using her services during months when they don't have doctor's appointments. A small laundry was provided and used at least once a month by 62.50 (20) per cent of the residents. A number of residents, 37.50 per cent (12) did not use the laundry, these tenants wash by hand or had friends or relatives do their washing for them. Several tenants that reported using the laundry on site actually preferred to go down town as a group to do their laundry because there were more machines and it cost 10¢ less per load to use. The housing authority charged slightly higher prices in order to discourage outsiders from using facilities. A mail box for sending letters and individual boxes were provided at the entrance of the community center, 62.50 (20) of the residents used

the mail box at least once a month for mailing letters. All but a single resident, who has not changed her mailing address, had their own mail boxes where their mail was delivered. The community center was located within close proximity to all apartments. It was observed that most residents walked to the community center if the weather was nice. Because most services were available on site, the tenants were much less dependent as a group on others for most services and mobility to these on site services was very high.

A negative correlation was discovered between the environmental factor, availability of services (on site) and the well-being index, family contact. When services were provided on site, family contact tended to decrease. Providing adequate on site services enabled the resident to be less dependent on relatives. A higher degree of independence permitted the resident to provide for himself/herself rather than to be provided for. None of the on site services at Northview were mandatory.

The positive relationship between availability of services (on site) and health suggested that the availability of services on site contributed to a positive attitude about one's personal health. The population in this study overall stated that they were in good health. Fifty-six per cent (18) perceived their own health as good. Through the availability of needed services, the individuals were better able to maintain their general well-being.

A strong positive relationship was found between availability of services (on site) and activity participation (on site). Adequate on site services appeared to enhance on site activity participation among residents. Providing on site services encouraged social

interaction among residents. Regularly scheduled on site activities included:

<u>Activity</u>	<u>Frequency of Meeting</u>
1. Northview Card Club....	once a month
2. "Song Fest".....	every Sunday
3. Gardening.....	seasonal
4. Pot Luck Dinner.....	every six weeks
5. "Mail Time".....	daily gathering waiting for mailman
6. Bible Study.....	twice a month
7. Cards with Neighbors...	3-4 times a week

A multipurpose room within the community center had kitchen facilities, folding tables and chairs, card tables, and a piano. Any tenant could reserve the community room free of charge for a family dinner, reunion, club, private party, etc.

5. Availability of Services (off site) - Three well-being indices



correlated with the environmental factor, availability of services (off site). These three indices included: mobility, fearfulness and activity participation (on site).

A positive relationship was found between availability of services (off site) and mobility. When needed services were readily accessible off site, the mobile tenants of Northview preferred to leave the site. Northview residents went off site to use such services as the beauty parlor, bank, post office, church,

grocery store, etc. All 32 tenants left the site at least once a week. All needed services could be obtained without the resident leaving the site, for example, one could bank by mail or have their groceries delivered. This correlation indicated that residents actually prefer to leave the site when using these services. This preference appeared to be due in part to their rural background and the social aspects of the weekly trip to town.

A negative relationship existed between availability of services (off site) and fearfulness. This indicated that the availability of off site services evoked a lower degree of security in the residents. Residents appeared to be most secure when in their own respective homes, and were most fearful when they had to go off site.

A positive correlation between availability of services (off site) and activity participation (on site) suggested that when services were available off site, activity participation on site was also high. A community cohesiveness seemed to exist in Northview. Because of this closeness residents were active in on site activities. Going to town appeared to function as an additional social activity for small groups of residents.

6. Time/Distance/Accessibility of Services - Two well-being indices correlated with this environmental factor. These two indices were neighborhood satisfaction and health.

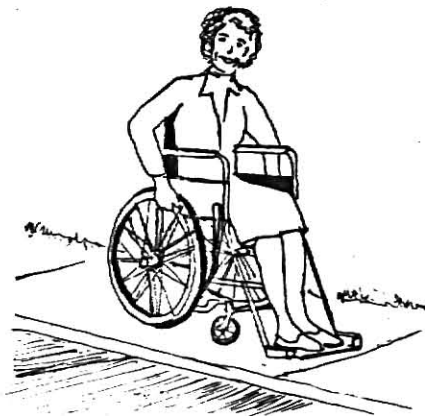
A positive correlation was found between time/distance/accessibility of services and neighborhood satisfaction. Convenience of

needed services appeared to contribute to high neighborhood satisfaction. Most of the Northview residents, 68.75 per cent (22), indicated that the housing location was good or very good as far as accessibility to business and social services were concerned. The remaining 31.25 per cent (10) of the residents felt the location was only fair or poor. U.S. Highway 24 separates Northview Housing from the city of Wamego (see Wamego City Map figure). The highway was observed to be an environmental barrier for some of the residents. Eleven (34.38%) of the residents did not feel safe in walking across the busy highway, and all residents expressed a need for caution when crossing the highway by either foot or automobile. Only 21.88 per cent (7) of the residents found it difficult or time consuming to do their shopping. These seven people were generally poorer in health. The Northview shopping area located just south of the housing project, (see City Map page 11) was rated slightly more convenient by residents than the down town shopping area. Both the down town and Northview shopping areas were considered to be convenient by most of the residents. The downtown shopping area was rated convenient-to very convenient by 84.38 per cent (27) of the residents and the Northview shopping area was rated convenient-to very convenient by 96.88 per cent (31) of the residents.

The positive correlation between time/distance/accessibility of services and health proposed that if distance to social services; amount of time it took to use the services; and the convenience of the services were good, then the tenants health was good. As stated

earlier, older people in general when provided a choice will seek out those environments most suited to their personal needs. The residents of Northview Housing were overall in good health and mobile. Because the housing site was on the outskirts of the city and somewhat remote from the down town area it was generally perceived by the occupants that this was a poor site location. However, this correlation could be an indication that when the residents were in good health, site location had less impact on well-being.

7. Environmental Barriers - None of the well-being indices significantly



correlated with environmental barriers.

Apparently the environmental barriers recorded within the Northview Housing Project were not overwhelming to the residents. Their competence levels were such that they could handle the existing barriers. This can best be explained through the "environmental docility" hypothesis as developed by M. Powell Lawton (1973). The

hypothesis suggested that as the competence of an individual decreases, the role of the environment in influencing behavior increases. Thus, the environmental barriers noted throughout the Northview Housing Project might have had a greater influence on the well-being of the residents if they were lower in competence and could have not coped as well with the same physical characteristics. For example, curbs were not a barrier to ambulatory residents but could be a barrier for those confined to a wheel chair. Several residents had adapted to the site through avoidance of environmental barriers. For example,

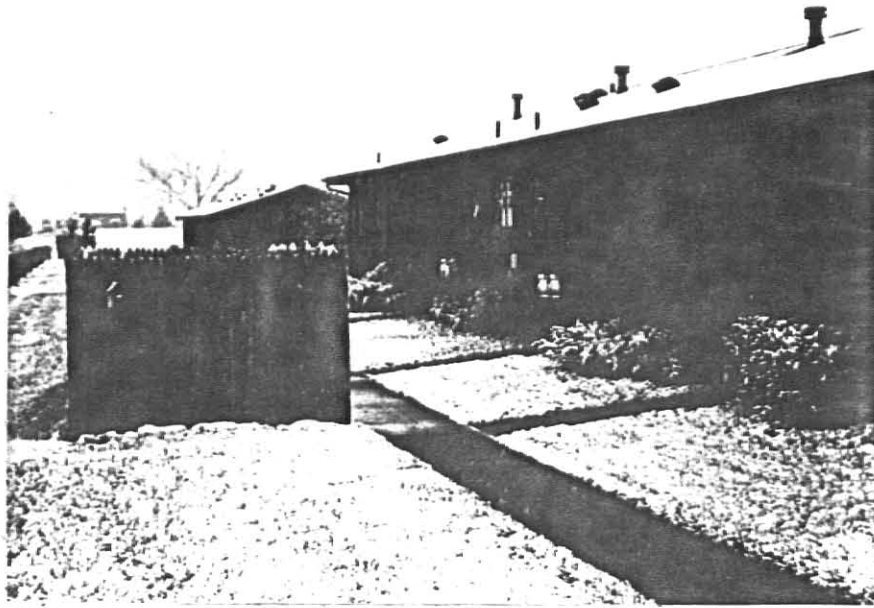
one woman did not use the walk leading to her front porch because the side walk slope was too steep, but instead used the more level walk leading to her backdoor. For the same reason, many residents did not use the west door of the community center that entered into the laundry. Two years earlier, one of the residents had fallen down the steps when leaving the laundry with a load of clothes in her arms because the top step was far too narrow having only a six inch run. During the present study most of the tenants used the front door of the community center which did not have steps. On windy days the laundry door was difficult to pull open from the outside. Other environmental barriers discovered by this investigator throughout the housing environment are displayed in photographs on subsequent pages.



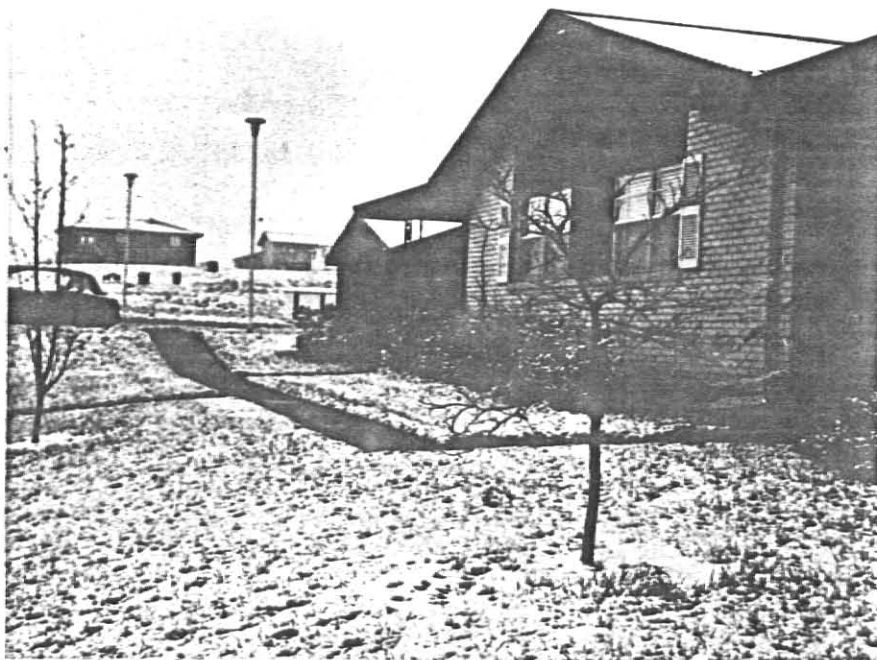
The window sills are too high. The tenants must stand in order to look outside. (For further information see Appendix III, Window Height Specifications.)



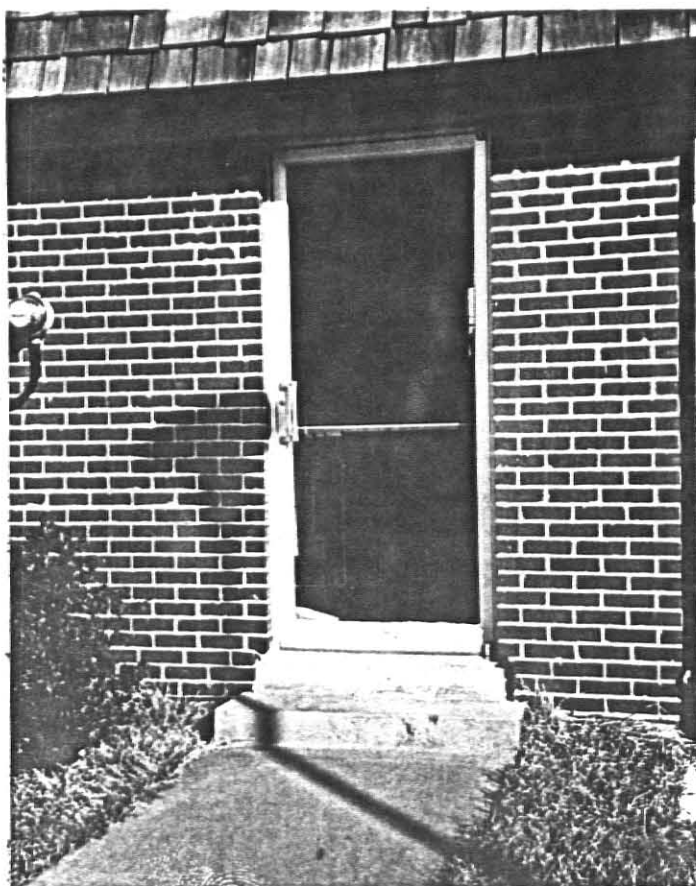
All phones were installed on the wall. If an elderly resident was to fall, he/she would be unable to reach the phone to call for help.



Trash receptacle is a visual barrier. This receptacle is located directly in front of the tenants' back porch where they enjoy sitting and watching the cars go by.



Slope is too steep.



Laundry room door is a barrier because the door is difficult to pull open and the top step is too narrow (6" run). Also there is no hand rail.

Lack of sidewalk is an environmental barrier. One resident placed this piece of plywood over a low spot for ease in walking to visit neighbors and walking to the Community Building.



CHAPTER V

CONCLUSIONS

When planning this housing environment for rural elderly, the sponsors and architects had objectives as well as many constraints throughout the decision making phases of the design. There were budget constraints, code stipulations, construction load requirements, etc., all which were required to be met. But above and beyond these constraints, the architects and sponsors had the responsibility to insure the satisfaction of the users who they were providing for. Acknowledging the importance of the users, this study has utilized tenant well-being as a criterion for environmental impact.

Findings of this study revealed that availability of services (on site) correlated with more aspects of well-being than any other environmental factor (see Table 10). A major advantage of this group housing facility for the elderly was the provision of centralized services within the housing setting. While Northview Housing offers a minimum number of services to its residents, these on site supportive services contributed greatly to the general well-being and independence of the residents. The availability of services (off site) ranked second in the number of well-being indices it correlated with (see Table 10). Many needed services such as the grocery store, bank, cafe, etc. were not available within the housing project. These off site services became the major link between the housing residents and the Wamego community. A harmonious balance seemed to exist between the number of site services provided within the housing and the off site services provided by the community.

Apartment size was recorded as a demographic characteristic in this study. It should have been more accurately considered an eighth environmental factor. The apartment size appeared to have a significant impact on tenant well-being (Table 5). Elderly tenants spent a substantial portion of each day in their apartment. Apartment size was a major contributor to the amount of storage and the amount of social space one had. The bachelor apartments were too small. The kitchen area needed more space to accommodate a table for eating, playing cards, writing letters, etc. The sleeping alcove in the bachelor apartment also needed a larger amount of bedspace to allow for the maneuvering of walkers or to permit one to move freely around the bed in order to clean and make the bed.

Health was discovered to be the well-being index affected by the largest number of environmental factors (see Table 10). The residents of Northview Housing were overall considered to be "well-elderly." They were assessed as having been self contained, capable of their own personal care, housekeeping, and cooking. The quality of the housing environment was particularly important to the elderly residents with poorer health. They were the least able to adapt, to alter, or to leave the housing environment. Overall results revealed for the most part a good match between the residents and the housing environment they had self-selected.

Summary of Data

The data indicate that the Northview Housing environment overall had a positive impact on its residents' well-being. The residents were

found to be a fairly homogeneous group having a similar degree of well-being with exception to their amount of activity participation both on and off site and their financial security. Table 11, (page 53) graphically depicts the environmental characteristics that were discovered to have a significant impact on tenant well-being.

Design Implications

The design principles described on the following pages are those which the author believes are important in the creation of a rural housing project that will contribute to the maximum well-being of the elderly tenants. These principles were developed from an analysis of the expressed desires and needs of the rural elderly sample interviewed and the observations made throughout the data collection period. The findings are presented in the form of IF, THEN statements. This means of presentation is commonly referred to as "pattern language," a method of formulating design solutions originated by Christopher Alexander, a practicing architect. A pattern can be divided into three parts:



1. PROBLEM - First there is a problem or conflict that must be overcome.
2. IF - The IF statement defines a set of conditions, under which the problem occurs.
3. THEN - The THEN part defines a spatial relation, or design, which should be pursued to solve the problem expressed in the IF statement.

The number of patterns that can be derived from a study such as this, is unlimited. For each problem or conflict stated there could be many

Table 11

The Impact Environmental Characteristics Have On Well-Being:
A Summary of Significant Correlations.

Environmental Characteristics	Well-Being Indices
1. Condition of the Environment	Neighborhood Satisfaction
2. Environmental Manipulation	Neighborhood Satisfaction
3. Time/Distance/Accessibility of Services	Neighborhood Satisfaction Health
4. Availability of Services (on site)	Family Contact Mobility Health Activity Participation (on site)
5. Availability of Services (off site)	Fearfulness Mobility Activity Participation (on site)
6. Security Measures	Health
7. Apartment Size	Neighborhood Satisfaction Health Fearfulness

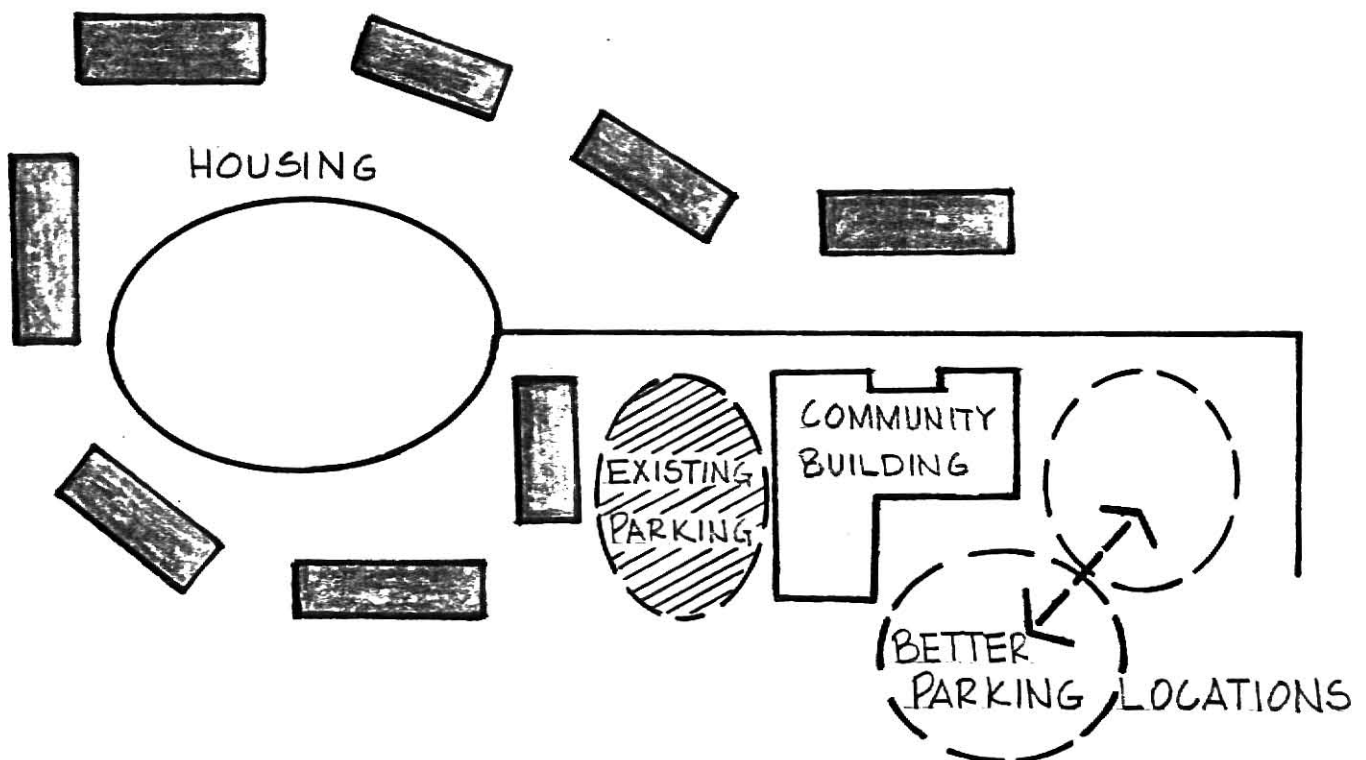
 Statistically significant positive relationship
 Statistically significant negative relationship

patterns developed. These design implications are also written in the form of possible design improvements for the Wamego Housing Authority.

1. PROBLEM On site services were important to tenant well-being. The Community Building was the focal point for on site services and activities. Several Wamego Community organizations rented the multi-purpose room within the community building. When these groups used the facility, parking became a problem. The residents liked the location of the community building at the entrance rather than being centrally located on the site because they preferred privacy from these "outsiders." Therefore,

IF on site services are to be used by outsiders as well as residents,

THEN the community building should be conveniently accessible to residents and public parking should be separated from the residential area.

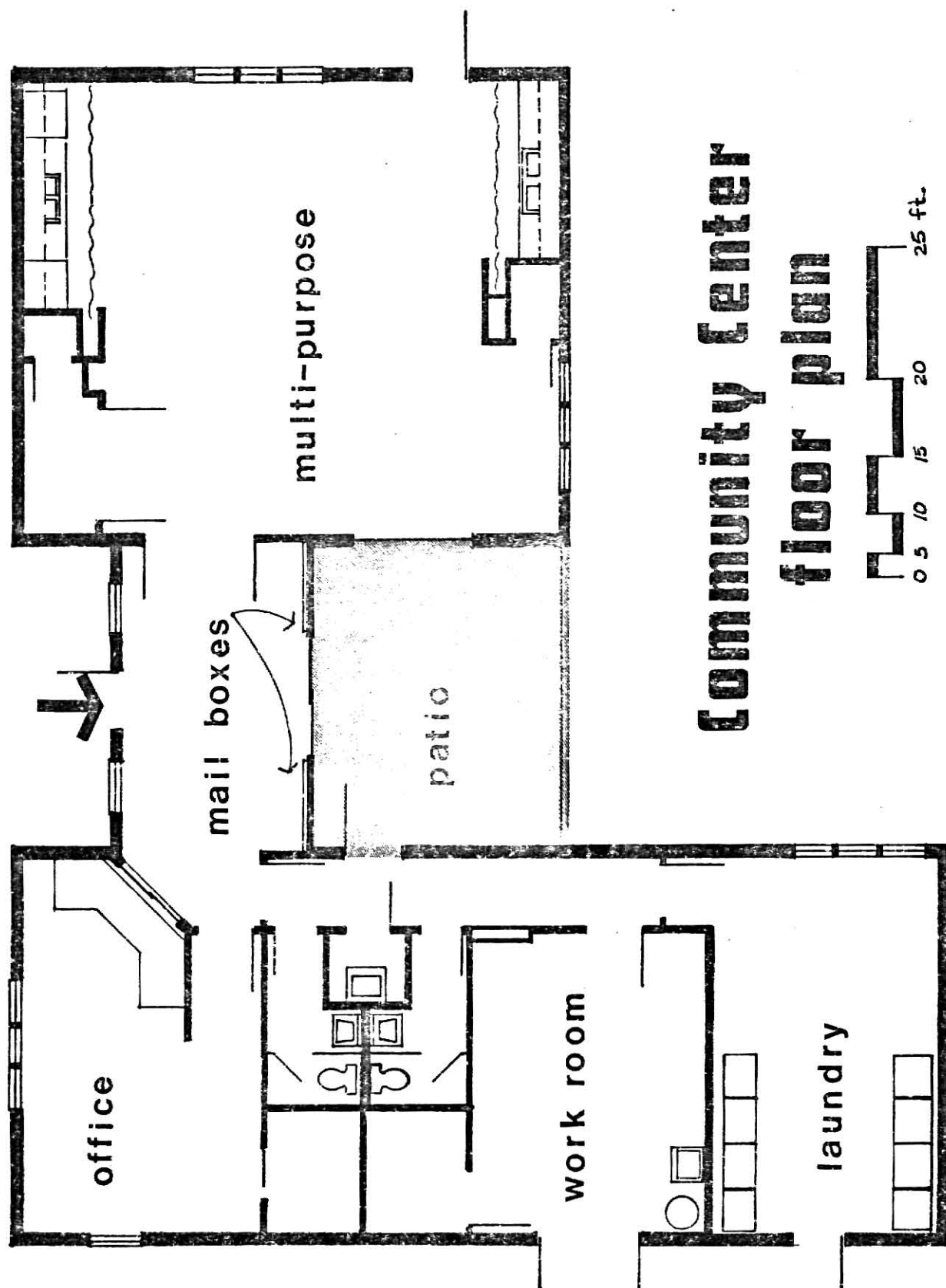


2. PROBLEM Off site services were found to be important to tenant well-being. The Northview Housing site was cut off from the city of Wamego by U.S. Highway 24. The highway was an environmental barrier restricting the residents' form of transportation. While several tenants reported walking across the highway, only one woman was observed to regularly walk across the highway. The major form of transportation for Northview residents was automobile. There was no public transportation available to the residents. Therefore, IF walking is an important form of transportation for rural elderly tenants,

THEN consideration must be given to provide the elderly residents with safe walking routes to the off site services they need.

In the case of Northview Housing, the highway is such a major barrier and cause of fear, that installation of a stop light at the crossing point would probably do very little to increase walking among residents. An overpass or underpass would be the best alternative however the cost would be prohibitive.

3. PROBLEM Use of the multi-purpose room within the community building was observed to be limited to organized activities. Most of the time the room was vacant. The two areas of high activity were the mail box area located at the entrance foyer and the laundry room located at the south end of the building (see floor plan page 56). As many as 15 people would gather daily in the laundry room and foyer to wait for the mailman. This activity referred to as "Mail time" took place daily and lasted from 15 to 30 minutes. Therefore,



IF residents gather around areas of high activity, such as the mail boxes,

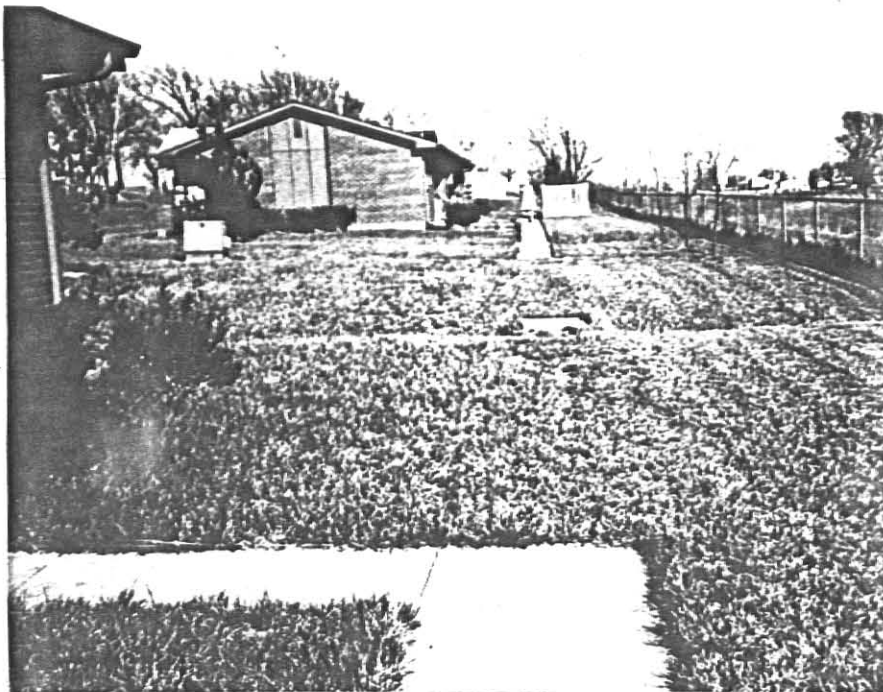
THEN provisions should be made for informal group seating adjacent to and within view of the area of activity.

This could be easily achieved at Northview by enclosing the outdoors porch area of the community building. The porch could then be used year round for small, informal group gatherings. Also, during the winter months many tenants take plants to the community building because they don't have enough room for them in their apartments. While the plants are visually pleasing, they overcrowd the sunny laundry room. The porch, if enclosed with windows on the entire south side, could provide a view of the highway and give the plants a winter home.

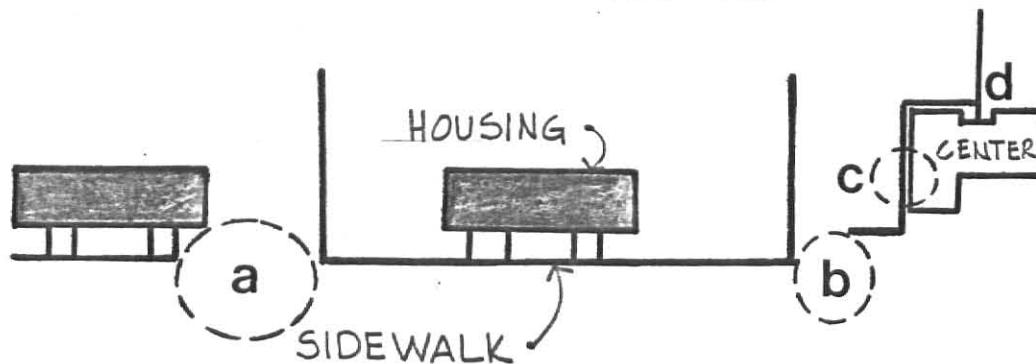
4. PROBLEM As stated earlier, environmental barriers were an important design criterion, but did not have a significant impact on the Northview tenants' well-being at the time of this investigation. As these tenants age and decline in health, the elimination of environmental barriers will become increasingly important. Northview residents were observed as being able to adapt or develop alternative means to avoid barriers. Through observations of where the tenants walked it was learned that the residents tended to take the shortest and easiest path to wherever they were going. When faced with a physical barrier, they avoided it by taking an alternate route to where they were going.

IF residents take the shortest and easiest path to wherever they are going,

THEN environmental barriers will play an important part in directing traffic flow. Good design for elderly will minimize environmental barriers and allow direct access to friends' homes and needed services.



Tenants were observed to walk across the lawn when sidewalks were not provided. When there was mud or snow tenants took a longer sidewalk route to where they were going.



a,b— Lack of sidewalk is a barrier on route to Center.

c,d— The closest entrance "c" has a barrier. Tenants enter at "d" instead.

5. PROBLEM The Northview Housing environment ranked high on security measures. The housing was essentially crime free and accidents recorded within the project were minimal. Danger from weather, however was overlooked. These Kansas residents were very conscious of the threat of disaster from tornadoes. When the Wamego emergency sirens were sounded, the residents had no where close to go.

IF stress is induced due to fear of danger from accident, fire, crime or weather,

THEN designers can reduce this kind of stress by knowledge of its existence and countering it with preventive measures such as a fallout shelter or basement in the community building; adequate outdoor lighting; and installation of jack phones instead of wall mounted phones.

6. PROBLEM Those residents living in the small bachelor apartments were less satisfied and lower in well-being than residents in the larger apartments. These efficiency apartments were not suitable because of their small size. They were not large enough to accommodate a kitchen table and chairs which is an important aspect of rural elderly "card playing" social life. Also storage for clothing, bedding, and other personal items was inadequate. The living room was also too small and limited the number of guests a resident could comfortably entertain to a maximum of two or three persons.

IF entertaining friends, neighbors, and relatives in ones own home is important to rural elderly residents,

THEN designers must provide ample space in the kitchen area for a table and four chairs. The living room space must also comfortably seat 3-4 people and allow room for a T.V. set. A coat closet near the front door would also be desirable.

7. PROBLEM The condition of the Northview Housing environment was good. The dwelling units and surrounding grounds were attractive and well maintained. Unlike many low income federal housing projects, Northview was not thought of as a "poor" or "undesirable" place to live. The housing site, however still had an institutional character.

IF a residential character is desired,

THEN, design must encourage and allow personalization of the outdoor area surrounding ones apartment as well as their interior living space.

In Northview, this could be accomplished by allowing tenants to plant flowers in restricted areas close to their porches. Larger shade trees would also contribute to a residential atmosphere. Better landscaping overall could improve the barren character of the housing project. Personalization of apartment interiors could be enhanced by allowing tenants to hammer small nails in the walls for hanging wall clocks, family photographs, etc. Allowing hooks to be placed in the ceiling for hanging lamps and plants would also be beneficial.

8. PROBLEM Service needs of the residents will change as they age, gradually becoming more infirm and dependent.

IF the needs of the residents change as they age,

THEN, the building design and on site services should be planned to accommodate changes in the resident population.

At Northview, the housing site and individual units should be altered to permit handicapped persons to more easily negotiate the housing environment. Also, the Community Center could be altered to meet the changing needs of the residents. For example, the manager's office could eventually be turned into a small nursing annex for the county health nurse.

A friendship meals program might be started in the Community Center, thus providing an additional on site service.

Contrasts Between Urban Elderly and Rural Elderly Housing Needs

Perhaps the greatest difference between rural elderly and urban elderly is the number of housing options available to each of them. The urban elderly are often able to choose among various types of buildings and projects; degrees of population density; and choose between high rise or low rise buildings, town house or single family detached units. The rural elderly have less options. They typically either live in a single family home; the local federal housing project (if there is one), or a nursing home. This often causes rural elderly to live in housing that may not suite their special needs. An elderly resident confined to a wheel

chair would be confronted with numerous environmental barriers at Northview. The housing was primarily designed for independent, ambulatory elderly residents,

Because rural elderly are most familiar with single family dwellings, the one story row house is preferred over the high rise apartment complex. Northview residents liked having a "front and back door" with a porch outside to sit on.

Northview Housing was located on the outskirts of the city and somewhat isolated from the rest of the town. For five years Northview was surrounded by pasture land on the North, East, and West. The rural residents liked their privacy. As one man stated, "I've always lived on a farm and I like to look out and watch the sun set. This reminds me of the farm. I wouldn't want to live in town."

Urban elderly might be more fearful of living in a small semi-isolated housing project.

Mobility patterns also differ between rural elderly and urban elderly. The Northview residents had no public transportation. Only two transportation means were available, walking and traveling by car. Those elderly tenants who did not drive relied on friends and relatives for their transportation needs. Urban samples have shown that a successful elderly housing site should be within walking distance (3-6 blocks) of needed services. This rural sample was not overly disturbed by their ten block distance from the down town shopping area. The rural elderly persons perception of critical distance may differ from the urban elderly.

The garden area, while used by only a limited number of residents, was enjoyed by all. These rural elderly tenants came from a background

where crops were very important. The men especially seemed to actively work in the garden. In housing facilities designed for urban elderly, the inclusion of a large garden site might be less important.

The mail boxes were centrally located in the community building. Walking to the mail box is an integral part of rural life. "Mail time" at Northview was a social activity. Door-to-door delivery of mail was not necessary. These rural elderly preferred to go to a service rather than have it delivered. If they were able, they went to the bank, rather than banked by mail; they would go to the grocery store rather than have groceries delivered; etc. Urban elderly who have always had their mail delivered directly to their home, might be less satisfied with having to walk 1-2 blocks to get their mail.

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APPENDICES

APPENDIX I

NORTHVIEW HOUSING QUESTIONNAIRE

QUESTIONNAIRE FOR NORTHVIEW HOUSING RESIDENTS, WAMEGO, KANSAS

Part I. Measures of Well-Being

A. Demographic Information:

1. Name: _____ Address: _____
2. Age : _____
3. Marital Status: M W S D
4. Sex : M Fe
5. How long have you lived in this housing? _____
6. Apartment size: Bachelor
1 bedroom
2 bedroom

B. Friendship in Housing:

Usually in the place where we live our neighbors are acquaintances, friends, and very good friends.

1. How many people in this housing project do you consider very good friends? _____
2. How often do you contact the friend you see most often? _____
3. Do you contact this friend most often by:
____ a. Letter
____ b. Phone
____ c. Personal visits
4. Where do you and this friend get together more frequently:
____ a. Here in your home,
____ b. In your friend's home, or
____ c. Some other common meeting place: _____

C. Neighborhood Satisfaction:

1. How much do you like living in this neighborhood? _____
2. If you could live anywhere you wanted, where would you like to live? _____
3. How much do you like living in this house? _____

D. Mobility:

1. How often do you go out of doors in warm weather? _____

2. About how often do you leave this neighborhood? _____

3. Do you now drive an automobile? Yes No

4. Do you take long walks? Yes No

E. Life Satisfaction: (Agree/Disagree Statements)

1. I feel my age but it does not bother me. A D

2. As I grow older things seem better than I thought they would be. A D

3. Little things bother me more this year. A D

4. As you get older you are less useful. A D

5. I have as much pep as I did last year. A D

6. My life could be happier than it is now. A D

7. How often do you feel lonely?

- _____ a. never
- _____ b. occasionally
- _____ c. often
- _____ d. all the time

F. Family Contact:

1. Which relative communicates with you most often? _____

2. How often does this relative visit with you? _____

3. Do you and this relative communicate most often by:

- _____ a. mail
- _____ b. telephone
- _____ c. personal visits

4. How important is it to you that you have frequent contact with your family? _____

G. Feeling of Security:

1. Do you feel that your personal belongings in your home are safe during your absence? Yes No

2. Do you ever feel unsafe in this neighborhood? Yes No

3. If yes, why? _____

H. Health:

1. In general how would you rate your health at the present? poor, fair, go

2. Compared to other people your own age, would you say your health is:

- _____ a. better than
- _____ b. same as
- _____ c. worse

1. Activity Participation: (On Site and Off site)

On Site Activity	Frequency of Attendance	Distance from Home	Mode of Transportation
1. Northview Club			
2. Song Fest			
3. Gardening			
4. Pot Luck			
5. Mail Time			
6. Bible Study			
7.			

What organizations and other activities do you participate in outside of this housing neighborhood?

Off Site Activity	Frequency of Attendance	Distance from Home	Mode of Transportation
1.			
2.			
3.			
4.			

J. Financial Security:

1. Compared to previous housing you've lived in, is this housing:
 - ☐ a. more expensive
 - ☐ b. less expensive
 - ☐ c. about the same
2. Compared to previous housing you've lived in, is it:
 - ☐ a. more convenient
 - ☐ b. less convenient
 - ☐ c. about the same
3. Compared to previous housing you've lived in, is this housing:
 - ☐ a. more comfortable
 - ☐ b. less comfortable
 - ☐ c. about the same
4. Does the cost of this housing place a heavy burden on your income?
Yes No
5. Do you feel that this housing is worth the money you pay? Yes No

Part II. Environmental Indices

A. Housing Up Keep and Maintenance:

1. Do you feel that the outdoors area of this housing project is well groomed and attractive? Yes No
2. When something goes wrong are repairs made promptly? Yes No
3. How would you rate the maintenance and up keep of your housing?

4. Are you satisfied with the snow removal in this housing vicinity?
Yes No

B. Security Measures:

1. Do you feel that this housing area is adequately lighted and patrolled by security personnel? Yes No
2. Have you ever had anything taken of value from your home? Yes No
3. Do you feel personally safe within the immediate area of your home?
Yes No
4. Are there any places within this housing project that you would feel unsafe to walk at night? _____

C. Environmental Barriers:

An architectural barrier is something that hampers a person from using a space to its fullest potential because of some construction detail. For example: You might not be able to safely climb stairs without the aid of a hand rail.

1. Are there any architectural barriers that you have noticed within:

a. Your home _____

b. The outdoors area _____

c. The Community Center _____

2. a. Have you had any accidents while living here? Yes No

b. If yes, What? _____

3. One of the obvious possible hazardous areas near you is the highway. Do you feel safe in crossing the highway when walking?

Yes No

If not, why? _____

D. Environmental Manipulation:

1. Are there any rules or policies concerning the use of your home or surrounding grounds that you would like to see changed? _____

2. Do you have adequate room and storage for your belongings? Yes No

E. Availability of Social Services: (On Site and Off Site)

On Site Service	Frequency of Use	Mode of Transportation (Including Delivery)
1. Mobile Library		
2. Meals on Wheels		
3. County Nurse		
4. Laundry		
5. Mail Box		
6.		

E. Availability of Social Services Continued:

Off Site Service	Frequency of Use	Distance from Home	Mode of Transportation
1. Beauty Parlor			
2. Barber Shop			
3. Grocery Store			
4. Bank			
5. Post Office			
6. Church			
7. Clinic/Hospital			
8. Nursing Home			
9. Cafe			
10. Department Store			
11.			

F. Time/Distance/Location of Services:

1. How would you rate the location of your housing as far as accessibility to shopping areas, doctor's office, and the other business and social services you use in Wamego:
☐ a. very good
☐ b. good
☐ c. fair
☐ d. poor
2. Do you find it difficult or unusually time consuming to take care of your shopping and utilization of other services? Yes No
3. How would you describe the downtown shopping area:
☐ a. very convenient
☐ b. convenient
☐ c. not convenient
4. How would you describe the Northview shopping area:
☐ a. very convenient
☐ b. convenient
☐ c. not convenient
5. Do you think you would like it better if the community center was located closer to your home? Yes No

APPENDIX II

QUESTIONNAIRE CODE SHEET

Questions with an astrick were added together to measure
the variable indicated on the left hand edge

Part I. Well-Being

Card #1

Columns	Question #	Description	Key
Demographic	1-2	I.D. Number	
	3	Card Number	
	* 4-5	A-2 Age	Actual Number of Years
	6	A-3 Marital Status	1=Divorced 3=Widowed 2=Single 4=Married
	7	A-4 Sex	1=Fe 2=M
	* 8-9	A-5 Length of Residence	Actual Number of Months
	* 10	A-6 Apartment Size	1=Bachelor 2=One Bedroom 3=Two Bedroom
Friendship in Housing	*11-12	B-1 Number of Resident Friends	Actual Number
	* 13	B-2 Frequency of Contact With Friend	1=1 x Week 2=2-3 x Week 3=4-5 x Week 4=Everyday 5=2-3 x Day 6=4-5 x Day
	* 14	B-3 Means of Contact	1=Letter 2=Phone 3=Personal Visits
	15	B-4 Most Frequent Location of Visits with Friend	1=Own Home 2=Friend's Home 3=50/50 4=Other
	16	B-4 If other Location Mentioned	1=Only Talk on Phone 2=Porch 3=Community Center 4=Down Town 5=Out to Eat

B2

	Columns	Question #	Description	Key
Neighborhood Satisfaction	* 17	C-1	How Much Likes Neighborhood	1=Negative 2=Positive 3=Strong Positive
	* 18	C-2	Where One Would Like Live	1=Somewhere Else 2=Here
	19	C-2	Where One Would Like to Live If Somewhere Else	1=Warmer State ie; Florida 2=In the Mountains 3=In the North East ie; N.Y. 4=On Farm 5=Closer to Children 6=Closer to Town 7=In a Larger Apartment
	* 20	C-3	How Much Do You Like This House?	1=Negative Response 2=Positive Response 3=Strong Positive
Mobility	* 21	D-1	How Often One Goes Outdoors in Warm Weather?	1=3 x Week 2=1 x Day 3=2-3 x Day 4=4 x Day 5=5-6 x Day 6=Live Outdoors
	* 22	D-2	How Often One Leaves Neighborhood	1=1 x Week 2=2-3 x Week 3=4-5 x Week 4=1-2 x Day 5=3-4 x Day
	* 23	D-3	Drivers An Auto	1=No 2=Yes
	* 24	D-4	Takes Long Walks	1=No 2=Yes
Life Satisfaction	* 25	E-1	Feel Age, Does Not Bother Me	1=No 2=Yes
	* 26	E-2	Things Seem Better Than I Thought They Would Be	1=No 2=Yes
	* 27	E-3	Little Things Bother Me More This Year	1=Yes 2=No
	* 28	E-4	As You Get Older You Are Less Useful	1=Yes 2=No
	* 29	E-5	Has as Much Pep as Last Year	1=No 2=Yes
	* 30	E-6	Life Could Be Happier	1=Yes 2=No

Columns	Question #	Description	Key
* 31	E-7	How Often One Feels Loney	1=All the Time 2=Alot (Often) 3=Occasionally 4=Never
Family Contact	32	Family Contact	0=No Family 1=Son 2=Daughter 3=Niece 4=Cousin 5=Sister 6=Aunt 7=Mother 8=Grandchild
	* 33	Frequency of Contact With Family Member	1=2-3 x Month 2=1 x Week 3=2-3 x Week 4=4-5 x Week 5=Everday
	* 34	How Contacted	1=Mail 2=Phone 3=Personal Visits
	35	Importance of Frequent Family Contact	1=Not Very Important 2=Important 3=Very Important
Fearfulness	* 36	G-1 Feeling that Personal Belongings are Safe During Ones Absence	1=No 2=Yes
	* 37	G-2 Feel Unsafe In Neighborhood?	1=Yes 2=No
	38	G-3 If Yes, Why?	1=Leery of New Homes to the North
Health	* 39	H-1 Rate Personal Health at Present	1=Poor 2=Fair 3=Good
	* 40	H-2 Health Compared to Others Same Age	1=Worse 2=Same As 3=Better Than

Columns	Question #	Description	Key
Activity Participation (On Site)	*41-42	I-1a Frequency of Attendance Northview Club (12 x Year)	0=Never 1=Hardly Ever (1x12=12) 2=Occasionally (2x12=24) 3=Regularly (3x12=36)
	*43-45	I-2a Frequency of Attendance Song Fest (52 x Year)	52 104 156
	*46-48	I-3a Frequency of Attendance Gardening (60 x Year)	60 120 180
	*49-50	I-4a Frequency of Attendance Pot Luck (8 x Year)	8 16 24
	*51-53	I-5a Frequency of Attendance Mail Time (359x Year)	359 718 999
	*54-55	I-6a Frequency of Attendance Bible Study (24 x Year)	24 48 72
	*56-58	I-7a Frequency of Attendance with Neighbors (104x Year)	104 208 312
Total Scores of Well-Being Indices	* 59	I-1b Perceived Distance to Northview Club from Home	1=Farther than it is 2=Same as 3=Shorter than it is
	* 60	I-2b Perceived Distance to Song Fest	" "
	61-62	Total Score Friendship in Housing	
	63	Total Score Neighborhood Satisfaction	
	64-65	Total Score Mobility	
Total Scores of Well-Being Indices	66-67	Total Score Life Satisfaction	
	68	Total Score Family Contact	

Columns	Question #	Description	Key
Total Scores of Well-Being Indices	69	Total Score Feeling of Security	
	70	Total Score Health	
	71-74	Total Score Activity Participation (on Site)	
	75-77	Total Score Activity Participation (Off Site)	
	78-79	Total Score Financial Security	

Card #2

Activity Participation (on site) continued.	* 4	I-3b	Preceived Distance to Gardening from Home	1=Farther than it is 2=Same as 3=Shorter than it is
	* 5	I-4b	Preceived Distance to Pot Luck from Home	" "
	* 6	I-5b	Preceived Distance to Mail Time from Home	" "
	* 7	I-6b	Preceived Distance to Bible Study from Home	" "
	* 8	I-7b	Preceived Distance to Cards with Friends	1=Meets in Homes
	* 9	I-1c	Mode of Transportation to Northview Club	1=Car 2=50% Car/50% Walk 3=Walk
	* 10	I-2c	Mode of Transportation to Song Fest	" "
	* 11	I-3c	Mode of Transportation to Gardening	" "
	* 12	I-4c	Mode of Transportation to Pot Luck	" "

Columns	Question #	Description	Key
* 13	I-5c	Mode of Transportation to Mail Time	1=Someone Else Delivers It 2=Car 3=50% Car/50% Walk 4=Walk
* 14	I-5c	Mode of Transportation to Bible Study	1=Car 2=50% Car/50% Walk 3=Walk
* 15	I-6c	Mode of Transportation to Cards with Friends	" "
Activity Participation (Off Site)	* 16	Off Site Activities Number of Church Related Activities One Participates in	1=One Activity 2=Two Activities 3=Three Activities 4=Four Activities
	* 17	Number of Work Related Activities One Participates in	1=Does Odd Jobs ie: Sewing Cooking, Cleaning 2=Has a Part Time Job
	* 18	Number of Social or Recreational Activities One Participates in	1=One Activity 2=Two Activities
	* 19	Number of Service Activities One Participates in	1=One Activity 2=Two Activities
	*20-22	Church Activities Frequency of Attendance	Actual Number of Times Per Year
	* 23	Frequency of Work Related Activities	1=Works 1-10 hrs./mo. 2=Works 5-10 hrs./wk. 3=Works 15-20 hrs./wk.
	*24-25	Social or Recreational Activities Frequency of Attendance	Actual Number of Times per Year
	*26-27	Service Activities Frequency of Attendance	Actual Number of Times per Year
28	I-1cc	Church Activity #1 Distance from Home	1=6-7 miles 2=3 miles 3=1 ½ miles 4=1 mile

Columns		Question #	Description	Key
				5=8-9 blks. 6=6-7 blks. 7=4-5 blks. 8=Community Center 9=Meets in Homes
	29	I-1cc	Church Activity #2	" "
	30	I-1cc	Church Activity #3	" "
	31	I-1cc	Church Activity #4	" "
	32	I-2cc	Work Activities Distance from Home	" "
	33	I-3cc	Social or Recreational Activity #1 Distance from Home	" "
	34	I-3cc	Social or Recreational Activity #2	" "
	35	I-3cc	Social or Recreational Activity #3	" "
	36	I-3cc	Social or Recreational Activity #4 Distance from Home	1=6-7 miles 2=3 miles 3=1 ½ miles 4=1 mile 5=8-9 blks. 6=6-7 blks. 7=4-5 blks. 8=Community Center 9=Meets in Home
	37	I-4cc	Service Activity #1 Distance from Home	" "
	38	I-4cc	Service Activity #2	" "
	39	I-4cc	Service Activity #3	" "
	40	I-4cc	Service Activity #4	" "
Financial Security	* 41	J-1	Compared to Previous Housing You've Lived In This Housing is:	1=More Expensive 2=About the Same 3=Less Expensive

Columns		Question #	Description	Key
Financial Security	*	42	J-2 Compared to Previous Housing You've Lived In This Housing is:	1=Less Convenient 2=About the Same 3=More Convenient
	*	43	J-3 " "	1=Less Comfortable 2=About the Same 3=More Comfortable
	*	44	J-4 Does the Cost of This Housing Place a Heavy Burden on Your Income	1=Yes 2=No
	*	45	J-5 Housing is Worth the Money You Pay	1=No 2=Yes

***** Part II. Environmental Indices *****

Housing Up Keep and Maintenance	*	46	A-1 Outdoors Area is Well Groomed and Attractive	1=No 2=Yes
	*	47	A-2 Repairs Made Promptly	1=No 2=Yes
	*	48	A-3 Maintenance Rating	1=Poor 2=Fair 3=Good
	*	49	A-4 Satisfied with Snow Removal	1=No 2=Yes & No 3=Yes
		50	A-4 If No, Why?	1=City Doesn't Clean Streets Frequently 2=Mr. Pervis is too Slow and too Old to do it himself
Security Measures	*	51	B-1 Area Adequately Lighted	1=No 2=Yes
	*	52	B-1 Area Adequately Patrolled	1=No 2=Yes
	*	53	B-2 Anything of Value Taken from Your Home?	1=Yes 2=No

Columns	Question #	Description	Key
Security Measures	* 54	B-3 Feel Personally Safe Within The Immediate Area of Your Home	1=No 2=Yes
	* 55	B-4 Do you feel safe to walk in this housing project at night?	1=Won't walk at night 2=Will only walk in certain areas 3=Will walk at night
	* 56	B-4 Places within the housing project you feel unsafe to walk at night	1=To the North where the new houses are 2=Near the Community Center 3=In the Backyards 4=Won't walk if there are dogs in the area
Environmental Barriers	* 57	C-1a Number of Architectural Barriers noted within the home	1=Five Barriers 2=Four Barriers 3=Three Barriers 4=Two Barriers 5=One Barrier 6=None
	* 58	C-1b Barriers noted in the Outdoors area	1=Four Barriers 2=Three Barriers 3=Two Barriers 4=One Barrier 5=None
	* 59	C-1c Barriers noted in the Community Center	1=Five Barriers 2=Four Barriers 3=Three Barriers 4=Two Barriers 5=One Barrier 6=None
	* 60	C-2 Have You Had Any Accidents while Living Here?	1=Yes 2=No
	* 61	C-2 If yes, What?	1=Falling Down Steps 2=Falling Outdoors 3=Tripping
	* 62	C-3 Feel Safe Walking Across Highway	1=No 2=Yes
	* 63	C-3 If No, Why?	1=I Always Go In a Car 2=I Don't Walk that Far

Columns	Question #	Description	Key
Environmental Manipulation*	64	D-1 Number of Rules One Would Like Changed	1=Three Rules 2=Two Rules 3=One Rule 4=None
	65	D-2 Has Adequate Room and Storage for Belongings	1=No 2=Yes
Total Scores of Environmental Indices	66-67	Total Score Up Keep & Maintenance	
	68-69	Total Score Security Measures	
	70-71	Total Score Environmental Barriers	
	72	Total Score Environmental Manipulation	
	73-74	Total Score Availability of Services (on site)	
	75-78	" " (off site)	
	79-80	Total Score Time/Distance/location of services	

Card #3

Availability of Social Services (on Site) *	4	E-1a	Mobile Library Frequency of Use	1=1-3 Times/Year 2=1 Time/Month 3=2 Times/Month 4=1 Time/Week 5=2 Times/Week
	5	E-2a	Meals on Wheels Frequency of Use	1=Don't Use 2=Use Daily
	6	E-3a	County Nurse Frequency of Use	1=1-2 Times/Year 2=3-4 Times/Year 3=1 Time/Month

Columns		Question #	Description	Key
(On Site)	* 7	E-4a	Laundry Frequency of Use	1=1 time/month 2=2 times/month 3=1 time/week 4=2 times/week
	* 8	E-5a	Mail Box Frequency of Use	1=1 time/month 2=2 times/month 3=1 time/week 4=3 times/week 5=Daily
Availability of Social Services (Off Site)	* 9-10	E-1b	Beauty Parlor Frequency of Use	Actual Number of Times per Year
	*11-12	E-2b	Barber Shop Frequency of Use	" "
	*13-15	E-3b	Grocery Store Frequency of Use	" "
	*16-17	E-4b	Bank Frequency of Use	" "
	*18-20	E-5b	Post Office Frequency of Use	" "
	*21-23	E-6b	Church Frequency of Use	" "
	*24-25	E-7b	Clinic/Hospital Frequency of Use	" "
	*26-28	E-8b	Nursing Home Frequency of Use	" "
	*29-31	E-9b	Cafe Frequency of Use	" "
	*32-34	E-10b	Department Store Frequency of Use	" "
	*35-36	E-11b	Drug Store Frequency of Use	" "
	37	E-1c	Distance to Beauty Parlor	1=15 miles 5=1 ½ miles 2=10 miles 6=1 mile 3=6-7 miles 7=8-9 blocks (½ mile) 4=3 miles 8=6-7 blocks 9=4-5 blocks

Columns	Question #	Description	Key
Time/Distance/Location of Service	38	E-2c Distance to Barber Shop	1=greater than 10 miles 2=6-7 miles 3=3 miles 4=1 ½ miles 5=1 mile 6=½ + miles 7=6-7 blks 8=4-5 blks 9=less than 2 blks
	39	E-3c Distance to Grocery Store	" "
	40	E-4c Distance to Bank	" "
	41	E-5c Distance to Post Office	" "
	42	E-6c Distance to Church	" "
	43	E-7c Distance to Clinic/Hospital	" "
	44	E-8c Distance to Nursing Home	" "
	45	E-9c Distance to Cafe	" "
	46	E-10c Distance to Department Store	" "
	47	E-11c Distance to Drug Store	" "
	* 48	F-1 Rating of Housing location as far as accessibility to business and social services	1=poor 2=fair 3=good 4=very good
	* 49	F-2 Difficult or Time consuming to do one's shopping	1=Yes 2=No
	* 50	F-3 Downtown Shopping Area	1=Not convenient 2=Convenient 3=Very Convenient
	* 51	F-4 Northview Shopping Area	" "

Columns	Question #	Description	Key
52	F-5	Would you like it Better if the Community Center Was Closer to Your Home?	1=Yes 2=No
Demographic		Age	Actual age
		Length of Residence	Actual number of months
		Apartment size	1=Bachelor apartment 2=One bedroom 3=Two bedroom
		Monthly Rent	Actual monthly payment

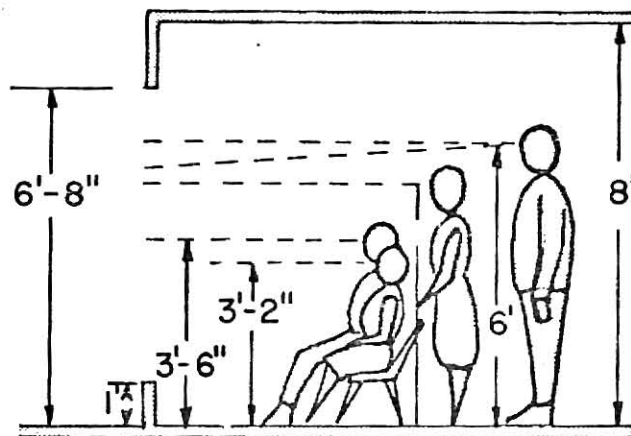
APPENDIX III

WINDOW HEIGHT SPECIFICATIONS

WINDOWS

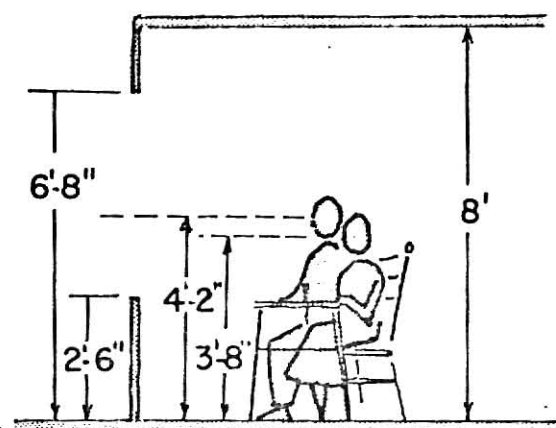
In housing for older people, the height of the windows is important, particularly in the living room, dining area, and bedroom. Sitting and looking out of the window is a daily activity for many elderly.

The living room windows should be low so that a person sitting in a lounge chair can see out. The bottom of the window should be no higher than 3 feet 2 inches from the floor, and can be as low as 1 foot. For window walls, it is desirable to include a guard rail, at a height that will give a feeling of security. To permit viewing from a standing position, the window should extend to a height of 6 feet 8 inches.



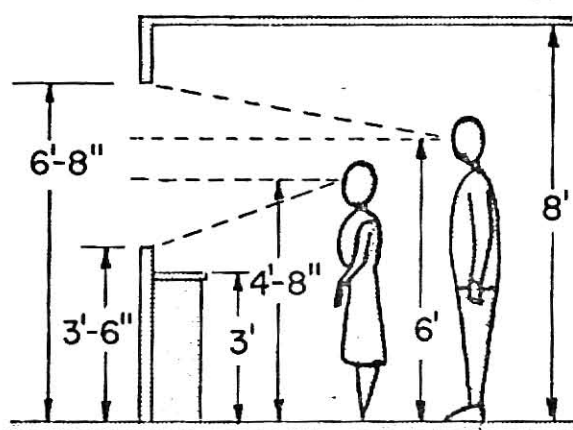
Eye-Level Zone for Living Rooms

For dining areas, the eye-level zone is determined by the sitting height. The sill of the window can be 2 feet 6 inches from the floor. For the bathroom and kitchen, the eye-level zone is set by the standing height. The opening of the window should be between 3 feet 6 inches and 6 feet 8 inches from the floor.



Eye-Level Zone for Dining Areas

For bedrooms, one window should be low enough to permit a person in bed to look out. In addition to making the room more pleasant, a low window provides an emergency exit. The eye-level zone suggested for the dining area could also apply to bedrooms¹.



Eye-Level Zone for Kitchens and Bathrooms

¹This information is adapted from Agriculture Information Bulletin No. 297, entitled "Multi-Unit Retirement Housing for Rural Areas," Agriculture Research Service, U.S. Department of Agriculture, 1965, page 19.

APPENDIX IV

SLIDES

SLIDES

<u>Number</u>	<u>Slide Description</u>
1.	Architects Rendering of Northview Housing Project.
2.	View of Northview Housing from U.S. Highway 24
3.	View of Northview Housing from U.S. Highway 24
4.	Community Center - Rear View
5.	Community Center - Front View
6.	Laundry Facilities in Community Center
7.	Pot Luck Dinner in Multi-Purpose Room
8.	Pot Luck Dinner in Multi-Purpose Room
9.	Card Party in Multi-Purpose Room
10.	Card Party in Multi-Purpose Room
11.	Garden Area/Pasture land to the North
12.	Garden Area/Pasture land to the North
13.	Garden Area/New Housing to the North
14.	Garden Area/New Housing to the North
15.	Housing Well Lighted/Open/Relatively Flat Site
16.	Housing Well Lighted/Open/Relatively Flat Site
17.	Housing Well Lighted/Open Relatively Flat Site
18.	Maintenance Man Mowing Lawn
19.	Trash Recepticle a Visual Barrier
20.	Lack of Sidewalk is an Environmental Barrier
21.	Plywood Placed over a Low Spot/Shows Environmental Manipulation by a Resident
22.	Phones Installed on Walls/Environmental Barrier

23. Slope is too steep
24. Slope is too steep
25. Laundry Door/Environmental Barrier/Top Step is Too Narrow (6 Inch Run)/No Hand Rail
26. Parking Problem When Community Center is Used by Outsiders
27. Window Sills Too High/Environmental Barrier
28. Bachelor Apartment is Too Small/Wall-to-Wall Furniture
29. Bachelor Apartment is Too Small/Window Sill Too High
30. Bachelor Apartment
31. Bachelor Apartment/Bedroom Large Enough for Only a Single Bed
32. Kitchen of One Bedroom Apartment
33. One Bedroom Apartment
34. No Storm Door/Environmental Manipulation
35. No Storm Door/Environmental Manipulation
36. Back Porch

THE IMPACT OF ENVIRONMENTAL CHARACTERISTICS
UPON THE WELL-BEING OF RURAL ELDERLY
TENANTS IN A FEDERALLY ASSISTED HOUSING PROJECT

by

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AN ABSTRACT OF A MASTER'S THESIS

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requirements for the degree

MASTER OF ARCHITECTURE

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1977

This research investigated the impact of seven environmental characteristics on the social and psychological well-being of 32 rural elderly tenants of a federally-assisted housing project. The environmental and well-being variables were measured through use of a questionnaire and observations. The environmental characteristics were found to have a significant impact on six well-being indices. The condition of the environment, environmental manipulation, apartment size, and time/distance/accessibility of services were associated with high neighborhood satisfaction. Availability of services (on site), security measures, apartment size, and time/distance/accessibility of services were associated with good health. Availability of services on and off site were associated with high mobility and high on site activity participation. Availability of services (off site) and apartment size were associated with fearfulness. Availability of services (on site) was associated with low family contact.

Findings of this study revealed that availability of services on and off site were particularly important to tenant well-being. Recommendations for designing rural housing environments that will contribute to the maximum well-being of the elderly tenants were made.