

HOUSING FOR OLDER ADULTS:

DORMITORY CONVERSION

By

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## PREFACE

This study is concerned with the possibility of converting Stout Hall at Oklahoma State University into older adult housing and an interdisciplinary gerontology study center. It is hoped that the results of this study will be implemented in order to provide more and better housing for older adults in Stillwater, and to further interdisciplinary research efforts in the field of gerontology.

I am deeply indebted to those people who encouraged me in the study of housing for older adults. Involvement in a design competition sponsored by the International Center for Social Gerontology was possible through the guidance of Dr. Kay Stewart and Mrs. Christine Salmon. I owe a special thanks to Mrs. Christine Salmon, my major advisor, for her deep concern, friendship, guidance, and faith in my ability. Her special interest and knowledge in the field of gerontology was an invaluable help.

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## CHAPTER I

### INTRODUCTION

#### Statement of the Problem

The field of social gerontology has rapidly become an area of great concern. Housing conditions of older people are receiving widespread attention and are the focus of much current research due to the increasing percentage of the elderly population. As of 1970, people 65 and over constituted almost ten percent of the total United States population, slightly more than 20 million. If total population growth continues as expected, there will be an increase in the total number of United States elderly to 28.8 million by the year 2000 (Lawton and Byerts, 1973).

With the decreasing occurrence of three generational families, increasing leisure time through forced retirement, shorter work weeks, and rising standards of living come changing needs reflected in housing choices. Sufficient living arrangements become even more critical because of the proportionately greater amount of time older people are likely to spend in the home (Proppe, 1968 and Loether, 1967). A great deal more time may be spent in the home, but at this same stage income may be drastically reduced through insufficient retirement planning, with only a small minority having a substantial income (Loether, 1967). For many older adults who did plan ahead for retirement, the rate of



inflation over the past few years has made planned incomes below average for current needs. Economic status of the elderly has appreciably improved over the last 20 years. However, their incomes are still well below those of their younger counterparts. The median income of older families in 1971 was \$5,453; only half that for younger families, \$10,976. For older people living alone or with non-relatives, median income was \$2,199; less than half that of younger people, \$4,783 (Lawton and Byerts, 1973).

There is a large body of statistical information about general characteristics of the aging population. This is obviously of importance in planning, but it is equally consequential to be concerned with the diversity of this population. If anything, the elderly differ more among themselves than do younger people, with inherent differences in their backgrounds and previous physical environments (Lawton and Byerts, 1973; Laging, 1963; and Hoffman and Thomas, 1970). The majority are relatively independent, in spite of physical impairments, with under five percent living in institutions in 1970 (Lawton and Byerts, 1973).

The successful functioning of the elderly in a home environment is "more directly governed by the physical attributes of the space than that of any other age group except the toddler, who must strain to reach a door knob" (Musson and Heusinkveld, 1963, p. 40). Even though this fact has been widely recognized, relatively little research has been conducted relating behavior and environment to the process of aging, and decisions are too often made on the basis of inadequate information (Lawton and Byerts, 1973; Vivrett, 1970; Lawton, 1970; and Havighurst, 1969). There is sufficient literature available on

architectural standards and detailing considered essential for older adult housing which is based on physical characteristics of the aging. This is basic information and useful for planning the environmental setting. However, it is within the realm of the social, cultural and psychological aspects of man where additional research must supplement existing knowledge (Natenshon, 1969). There is a "depressing general lack of research-based knowledge in this complex subject area" (Lawton and Byerts, 1973, p. 1). After investigating elderly housing in Southern California, Proppe (1968, p. 177) states that "architecture as a means of designing shelter for the 'mind' or to further the psychological well-being of a person has progressed little."

This lack of knowledge in the sociological and psychological aspects of the housing problem suggests the need for an interdisciplinary study approach. This approach should involve the architect and designer in testing the implications of the physical environment (Natenshon, 1969). The architect and designer need much more detailed information based on thorough social science research before successful housing solutions can be realized. Havighurst (1969, p. 13) stated:

Were monies to be made available for a considerable volume of housing earmarked for the population over 60 years of age, there would be little scientifically sound basis upon which structural, size, spatial or locational decisions, with respect to such housing, could be made.

Far too many existing facilities reflect outdated social attitudes and indicate necessary improvements in the design of geriatric facilities and in community planning (Madge, 1969). Research needs in this area have been identified as follows:

1. Experimental housing units provided for defined population groups in a defined range of environmental settings. . . .

2. Behavior-setting studies should be supported in a variety of community-size settings. . . .
3. Current and future transportation, traffic, and mobility problems of aging groups need further exploration. . . .
4. Research on the choices made by people and their decisions with respect to housing and living arrangements should be made with middle-aged as well as with aging people. There is no guarantee that the choices and decisions made by the contemporary generation of older people will also be made by the coming generations who will differ from them in education and health status. Furthermore, the changes of housing and living arrangements in metropolitan areas will present the next generations with substantially different problems of choice and decision than the present (Havighurst, 1969, p. 14).

There is currently an interest group at Oklahoma State University which has submitted a project proposal to the Research Foundation for a feasibility study in 1974-75 concerning the conversion of Stout Hall to an interdisciplinary gerontology study center. This center would ideally incorporate office space, classrooms, design laboratories, student housing, and elderly housing. The need for new housing for older adults in Stillwater has previously been established (Broom, 1972 and Joos, 1975).

Joos (1975) has identified some of the benefits of an experimental project for Oklahoma State University and the Stillwater community. Two of these are providing an alternative choice in retirement living accommodations for Stillwater and maximizing use of space by converting residence halls on campus. In addition to the benefits she identified, the advantages to a retired person living in a university setting could include:

1. use of recreational facilities,
2. association with younger people if desired,
3. variety of cultural and educational programs sponsored by the university,

4. movies,
5. use of library facilities,
6. classes to audit,
7. sports events,
8. use of university medical center,
9. use of Student Union facilities such as shops and restaurants,
10. university chapel,
11. campus policemen,
12. controlled parking and bicycle paths, and
13. well-landscaped walking areas.

Cooperation of university officials would be necessary in order to implement some of the benefits mentioned above.

#### Purpose of the Study

Stillwater currently has very few alternatives for housing older adults. This study explored the possibility of offering Stout Hall on the Oklahoma State University campus as one alternative in the spectrum of available housing for older adults in Stillwater. The specific purpose of this study was to apply existing research to the problem of converting building entrances and one wing of Stout Hall into suitable older adult housing. It is possible that the recommendations could be applied to similar dormitories.

The conversion of a portion of Stout Hall could offer an excellent opportunity to further study the appropriateness of this type of housing and to investigate the interior design as a behavior modifier. During a three week study tour of older adult housing in Europe, it became the feeling of this author that many of the design concepts

which have been implemented in Europe could easily be applied when designing older adult facilities in the United States. It is apparent that a great deal of additional research in the field of housing for older adults is necessary in order to increase life satisfaction for older adults in the United States. Emphasis should be placed on the sociological and psychological impact of physical planning and interior design of older adult housing.

#### Justification

This study was undertaken as a result of:

1. a proposal submitted to the Research Foundation for a feasibility study concerning the conversion of Stout Hall to an interdisciplinary gerontology study center;
2. results of a study by Joos (1975) which indicated a positive interest among retired and soon-to-be retired Oklahoma State University personnel concerning the possibility of living in dormitories on campus converted into apartments;
3. a recommendation by Joos (1975) that further study be directed at determining the architectural feasibility of converting a college dormitory into older adult housing;
4. research which indicated a definite need for further study and experimentation in the field of gerontology and the environment by interdisciplinary teams; and
5. the author's interest in the establishment of an interdisciplinary study center on the Oklahoma State University campus.

## Procedure

The procedure of this study was to:

1. discuss the possibility of converting Stout Hall into an interdisciplinary gerontology study center with members of an interest group at Oklahoma State University;
2. review the literature on designing environments for the elderly;
3. obtain and study the floor plans of an existing building known as Stout Hall;
4. select a "typical" wing on one floor for renovation into suitable apartments;
5. determine entrances into the building where wheelchair usage would necessitate change;
6. develop a plan to show possible renovations including drawings of floorplans and photographs of building entrances; and
7. have suggestions evaluated by an architectural consultant.

## Limitations of the Study

The limitations of this study are as follows:

1. Results apply only to the conversion of Stout Hall at Oklahoma State University for housing older adults.
2. Little current information concerning the relative success or failure of converting college dormitories into older adult housing was available.
3. The renovation of a dormitory meant designing around existing structural features which did not always allow the optimum design solution for housing older adults.

4. The study omits suggested plans for common areas, office space, classrooms, and laboratory space although this is a necessary step in converting the entire dormitory into an interdisciplinary gerontology study center.

## CHAPTER II

### REVIEW OF LITERATURE

#### Environments for Older Adults

There is currently an increasing community and national awareness of the effect of environment on the quality of life. National priorities are being directed toward living environments in which the physical, social, and psychological needs of people are fulfilled (Pruitt, 1973). Lawton (1970, pp. 124-125) defines "environment" as an ecological system with five components:

1. the individual,
2. the physical environment,
3. the personal environment, including individuals who are important sources of behavior control,
4. the suprapersonal environment which refers to the environmental characteristics resulting from the inhabitants' modal personal characteristics, and
5. the social environment.

For the aging person, environment either intensifies the quality of life or confines the potential for independent and satisfying later years (Havighurst, 1969). Because of the proportionately greater amount of time spent in the home by the elderly, the living space becomes an even greater influence. Therefore, the well-being of the elderly person is more dependent on the functional and aesthetic quality of the environment in which he lives (Salmon, 1963). These facts point directly to the obligation of the architect and designer to understand and manipulate space in order to determine the most positive



environment for older people.

#### Need for Interdisciplinary Study

Planners of housing for older people cannot create miracles. They can, however, determine the extent to which the individual can conserve his independence and social life (Madge, 1969). Successful design depends, therefore, on the degree to which the architect and designer explore various aspects of the aging persons' physical, psychological, and sociological identity. The problem here is that there is, at this time, not complete agreement on the needs, desires, and capabilities of older people (Natenshon, 1969). Possibly this is because of the diversity of the older adult population. However, Havighurst (1969, p. 41) states that "The most significant shortcoming in housing research is the failure to design and build purely experimental units." There has to be cooperation between the planner and the behavioral scientist. This working association is still seldom adopted and often the two are not certain how to work together (Progner, 1971). The field of gerontology offers an excellent opportunity to apply social science research to the planning process. The interior designer has a place of particular importance throughout the design of any living environment. His services are essential in realizing the total building concept by incorporating the ideas of everyone concerned with achieving the most ideal building (Pepper, 1961).

Possibly the single most important aspect of older people in relation to their environment is the diversity of the 65 and over population. This fact alone indicates the need for offering a wide range of housing choices, both in the architectural structure and in the

interior design. The variety of environments potentially available to the older population is increasing (Lawton, 1970). This is a positive step in developing housing which provides maximum flexibility "to reflect the increasing expectations of individual older persons for a high quality of life and their rising ability to achieve those expectations in the future" (Pruitt, 1973, p. 2). Thus it becomes impossible to prescribe an environment which will satisfy all or even a majority of older people (Lawton and Byerts, 1973).

#### Special Design Features

In addition to the need for providing a variety of housing choices, there are requirements for special design features and high standards of development. Vivrett (1961, p. 4) states that it is "generally agreed that the dwelling unit must be as good as, if not better than, the individual's customary living quarters of earlier years." During the aging process there is an increasing probability of failing health. Therefore it is advisable to design environments for the aging with special consideration for possible physical and mental disabilities. This need not imply an institutional atmosphere, since these environments may also be inhabited by older persons currently enjoying optimum health (Vivrett, 1961; Weiss, 1961; and Madge, 1969).

Loether (1967, p. 35) summarizes the special design features which housing experts recommend in the construction of housing for the elderly as being:

1. an adequate system of temperature and climate control,  
    . . .
2. adequate sources of both sunlight and artificial light,  
    . . .
3. adequate control of sound and noise, . . .

4. efficient design to assure the maximum conservation of energy and minimize the necessity for reaching, lifting, bending, pulling, and climbing, . . . and
5. built-in safety factors.

The "prosthetic" approach to design assumes a relatively fixed human disability and implements the use of environmental supports that will presumably maintain a higher level of functioning (Lawton, 1970).

There are structures designed for the elderly which restrict the use and development of a person's capabilities. "Independence where possible, and support otherwise, are goals of the ideal prosthetic environment" (Lawton, 1970, p. 129). It is this type of design application which should be the aim of all planners involved in housing decisions for older people.

#### Social and Psychological Considerations

Regardless of the designer or the design method, it is essential to incorporate the psychological and sociological aspects of aging into the planning process. It is simply not enough to assume that once the physical needs are met everything else will fall into place. As medical science advances and life span increases for a greater percentage of the population, it becomes increasingly evident that a major concern is to deal with the quality of these lives that are being extended (Lawton and Byerts, 1973).

The social problem of older people mentioned probably more often than any other is that of involuntary reduction of social interaction (Lawton, 1970). It is no more than basic consideration of human needs to afford each person the opportunity to experience the amount and type of interpersonal relationships he desires. Successful environmental

planning will reflect this consideration and devise ways in which interaction can develop naturally.

In retirement facilities it is often difficult to predict which spaces will foster social contacts. Research observations indicate that the highest interaction rate is found in spaces where "sitting and watching" behavior occurs. Lawton has found through his studies that space population and social interaction are not determined by furnishings alone. The most beautiful setting can go unused if it has not been strategically located in an area where some activity takes place. Other influencing factors on the probability of a social encounter are physical barriers or distances (Lawton, 1970).

Some of the psychological needs that are particularly difficult to satisfy for older Americans have been identified as the need for sensory experience, privacy, new experience, predictability, and self-esteem (Lawton and Byerts, 1973). At the present time, there is limited data available to designers concerning the relationship between an individual and his sensory environment (Havighurst, 1969). Through his senses, every person reacts to his environment either consciously or unconsciously. He is not always aware of his responses and often does not understand the reasons for them (Salmon, 1963). Because of this, it is more difficult to collect significant data on the way in which specific environmental design details affect his behavior. Lawton (1970) emphasizes the fact that there have been very few attempts at determining the acceptability of certain variables to older people such as levels of background noise and intensity and variety of color stimulation and/or form variation.

Cantela (1972) has provided support through his research for the fact that behaviors such as "lack of enthusiasm" or "aimless talking, walking, and moving" are primarily a direct result of inadequate stimulus variability and reinforcement of activity. In complete agreement with this, Proppe (1968, p. 179) states that:

Sensory deprivation would drive the healthiest man to his wit's end in a short period of time; and yet in our old-age homes we have done all that is possible to deprive the senses and the mind of the stimulations of normal life.

This is the point at which the architect and designer must concern themselves with the psychological affects of design on behavior. Used correctly and imaginatively, the design elements can be combined to create an environment which would improve the well-being of the older person. The goal, therefore, is to increase and intensify sensory stimulation for older people with failing sensory capacities. If adequate data concerning behavioral response to environmental changes were available, it would then be within the realm of planning to "alter in some degree the environment to achieve affects which could limit if not negate the feelings of isolation and dreariness of old age" (Proppe, 1968, p. 179).

Many older people voluntarily choose to live in an age-segregated environment because it offers them a more stimulating environment in which there is more commonality of interest than in other housing possibilities. Research indicates that:

1. within certain ranges, older people have more social activity as the number of other old people living near them increases,
2. a substantial minority of the elderly population (estimated as 25-30 percent) would actively like to live in environments populated only by other older people, and
3. age-segregated environments typically have very long waiting lists (Lawton and Byerts, 1973, p. 35).

### Conversion of Existing Structures

There is a wide range of group housing available, some of which involves the conversion of existing buildings, particularly hotels and recently vacant college dormitories. At this time, there has not been enough research to support the relative success or failure of these conversions. There are disagreements as to the economic feasibility of modifying an existing building as opposed to building a new structure. Grant (1973), however, feels that planners must include work with existing housing in order to improve the environment for all age groups. It has been determined by some authorities that low cost conversions which are "both commercially viable and at least moderately enriching to the tenants" are possible (Lawton and Byerts, 1973, p. 25). Daldin (1961, p. 1) states definitely that "anyone who advocates new buildings rather than converting the present fireproof structures has something else in mind other than the best, quickest and most economical way to care for the aged." On the other hand, Weiss (1961) believes that it is difficult to apply new standards to an existing structure, and that it is usually possible to provide only hotel type facilities with a variety of group services. The success of such a conversion would seem to rely on extensive evaluation of the site, interior and exterior structural modification possibilities, and services to be provided.

There is a rather extensive body of architectural literature concerning specifications and recommendations for the design of older adult housing. The large percentage of this is based on physical disabilities with only a very small part dealing with the psychological

and sociological characteristics of older people. Ostrander (1973, pp. 1-2) has made these generalizations about the housing situation:

1. A basic objective in the design of the interior spaces for older adults should be to enhance feelings of competency and control in dealing with the environment.
2. The range of individual differences in needs, capacity and ability is as great among the older adults as among any group in the population.
3. Spaces should be designed to satisfy human needs not merely to meet code requirements. Codes define a minimum functional environment not a humane environment.
4. Many older adults need a prosthetic environment that 'reaches out' to meet the sensory deficiencies, limited mobility, reduced agility and lessened physical strength of the older adult.
5. The built environment should focus on the present and future physical and mental capability of the older adult. The design should accommodate the least common denominator of physical and mental capability so people can continue to function in the space.

It is evident that environment has a great affect on human behavior.

However, without more extensive research on the psychological and sociological aspects of personality related to housing, it is difficult for planners to make decisions and determine exactly where the optimum solution lies.

## CHAPTER III

### DESIGN SOLUTION

#### Housing Needs

One specific purpose of this study was to determine whether or not "typical" dormitory rooms in Stout Hall could be combined to create suitable apartments for older adults. In order to accomplish this purpose, it was necessary to determine features which should be incorporated into the design of space for older adult housing. Lawton and Byerts (1973, pp. 7-8) identified some age-related changes:

Sensory processes of all kinds--vision, hearing, taste, smell, and body position--become less acute as a part of the normal aging process, and major losses in one or more senses are more likely with old age. . . . Muscular action and coordination may be affected by biological changes that reduce the speed with which information can be utilized to guide muscular behavior. . . . In addition, the sheer strength and endurance of muscles becomes diminished. The net result may be behavior that is slower, less accurate, less strong, and less confident than similar behavior at an earlier age might have been. Locomotion especially is an important instance of muscular behavior.

There are basic housing needs for all people which can briefly be described as (1) independence, (2) privacy, (3) individuality, (4) self-expression, (5) sense of community, (6) security and safety, (7) status, (8) opportunity for social interaction, and (9) comfort. In designing a facility for older adults, it is necessary to include special provisions for protecting, maintaining and increasing optimum physical and mental health. Workable solutions must be devised on an



individual basis for meeting the specific needs of older adults without losing sight of the behavioral and social aspects of the environment.

There has been an abundance of information written on design requirements which meet the physical needs of older adults. These come in the form of checklists, books, magazine articles, and pamphlets. They are repetitive to the point where it becomes impossible to give credit for each design detail. The disagreement which exists among many authorities concerning some design criteria indicates the need for further research in order to establish exactly where the optimum solution lies. While it may be found that there is no "ideal" set of standards, a more complete agreement on some details would seem possible following more extensive study. Because of the difference in opinions and the diversity of the older adult population, it is difficult for the designer to know which "expert" to follow. In the process of planning the renovation of Stout Hall, the information available on designing for older adults was used as a basis for many decisions although adaptations were made according to the demands of this particular building. The variety of design solutions suggested in this study should be evaluated empirically for effectiveness.

#### Exterior Modifications

Before attempting to develop conversion plans for a typical wing in Stout Hall, it was necessary to explore possibilities for exterior modifications to improve building access. Figure 1 gives an overview showing ramp placement for one east and one west building entrance. A portico has been added over the west entrances which extends out over the loading zone. This will provide protection for residents in

inclement weather (Figure 2). As is evidenced by the photographs in Figures 2 and 3, it will also be necessary to landscape the west entrances to eliminate hazardous trees and brush. Figure 3 further illustrates the modification of one west entrance to include a ramp.

There are two existing entrances on the east side of the building (Figure 1). Of these, the south entrance will remain as it is with the addition of sturdy handrails. The north entrance was chosen for modification because of the proximity to the parking lot located north of the building. A ramp will replace the stairs leading to this entrance (Figure 4). The stairs to the basement entrance, on the ramp side of the east first floor entrance, have been entirely eliminated (Figure 5). Ceramic tiles from the dismantled stairs can be used to repair the opposite set of stairs leading to the basement entrance. Figure 6 illustrates the elimination of unnecessary steps on the east lawn.

#### Conversion of Typical Wing

The author chose one wing from a typical floor (see Appendix) with which to work in renovating existing rooms into suitable facilities for older adults. Joos (1975) conducted a study of preferences of retired and soon-to-be-retired Oklahoma State University personnel for apartments in converted dormitories. She found that the majority of the respondents preferred a two-bedroom apartment. The respondents also expressed an interest in the reasonable rental or purchase price of such an apartment.

After experimentation with floorplans and space allowances, the author of this study has determined that a two-bedroom apartment would require the combination of four existing rooms. Such a combination

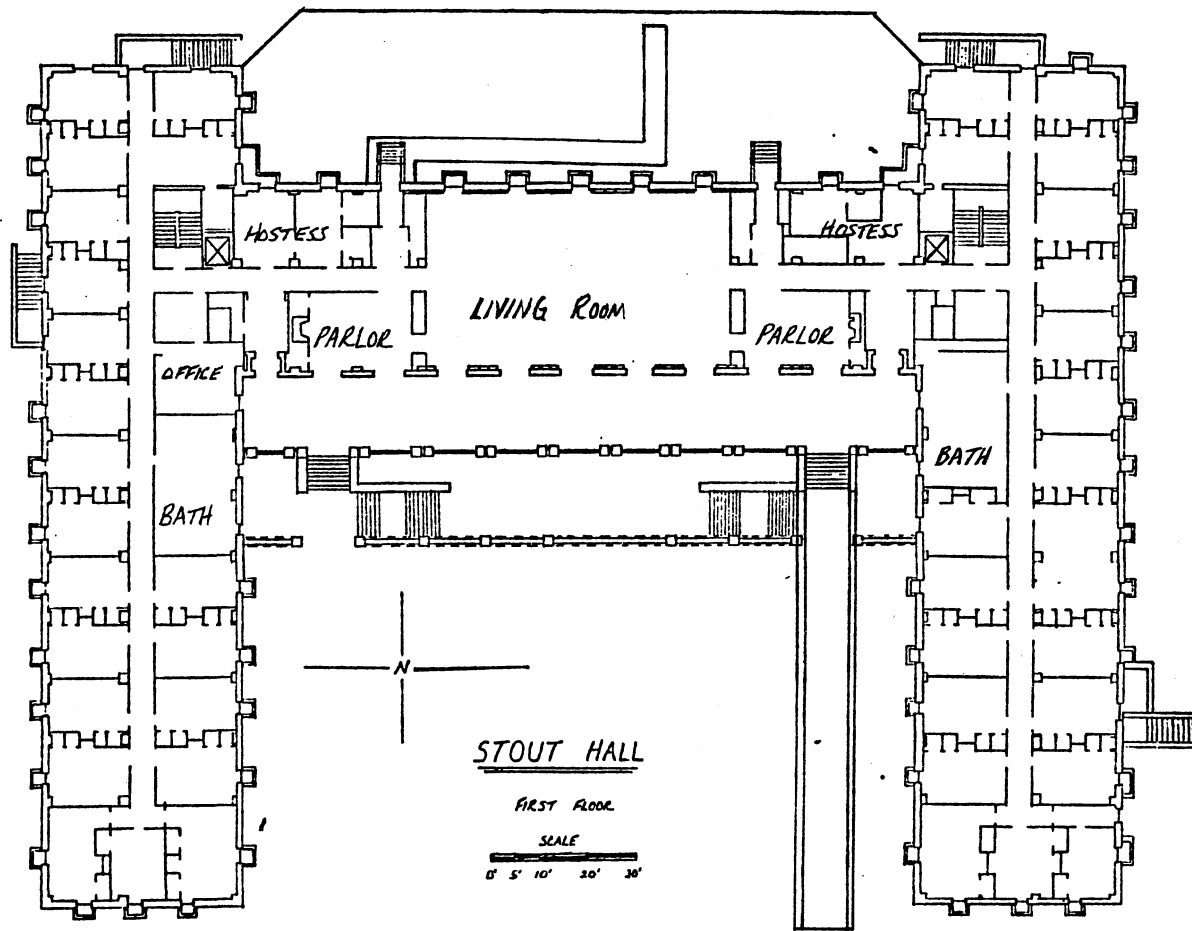


Figure 1. Exterior Modifications Showing Ramps and Portico



← N

Figure 2. Addition of Portico Over West Entrances and Loading Zone



← N

Figure 3. Modification of Entrance to Include  
One Ramp on West Side



Figure 4. Modification of Entrance to Include  
One Ramp on East Side

N →



Figure 5. Modification of Basement Entrance  
to Eliminate Stairs on Ramp Side  
of East First Floor Entrance



Figure 6. Elimination of Steps on East Lawn



would obviously increase the rental or purchase price. Therefore, it was decided that converting either two or three existing rooms into a one-bedroom apartment would be the most workable solution. This plan offered variety in the amount of square footage available and took into consideration the cost factor and number of apartments possible. The sections which have been suggested for removal are indicated by dotted lines in the drawings. As illustrated in Figure 1, after renovation one "typical" wing would include:

1. ten and one-half existing dormitory rooms combined to create five one-bedroom apartments,
2. nine existing dormitory rooms combined to create three one-bedroom apartments,
3. existing common bathroom facilities converted to a laundry room and card/game room,
4. existing elevator and stairs in west end of wing retained,
5. two and one-half existing dormitory rooms converted to an additional elevator, stairs, and hallway in the east end of the wing, and
6. existing dressing room converted to a lounge and cart storage.

Special design features have been incorporated throughout the renovated areas of the building in order to assist residents with varying degrees of physical and mental disabilities. Because the incidence of illness and temporary incapacity increases with age, the entire wing will allow the use of a wheelchair. There are some design details which are not evident in the floorplans and elevations. These details are necessary for achieving total satisfaction in the conversion plan.

Following is a discussion of features which should be located in each apartment and/or common area.

### Kitchen

There are a variety of kitchen sizes available in the converted apartments. Some of the kitchens are relatively small (Figures 8, 10, 13, and 15), permitting more square footage in the dining/living area. This allows for individual preference in space allotment. "Reach space" for older adults has not been agreed upon by experts. Overhead cabinets should not be higher than 63 to 72 inches. This eliminates the probability of chair climbing to reach an item. As a safety feature, storage over the range has been omitted. This space is used instead for a ventilating system. For base cabinets, low reach is 18 to 27 inches. However, drawers and vertical pull-out shelves in lower cabinets make this space useable.

A prefabricated kitchen unit makes it possible to adjust shelf heights, raise and lower counter heights, change positions of drawers and cabinets, and incorporate under counter pullouts. The average counter top is 2' 10" from the floor. Under sink clearance of 2' 6" wide permits the resident to work while seated, placing a removable cover over the sink if necessary to increase work area. Any cabinet which turns a corner contains a turntable for maximum use of space and ease in reach.

Electric ranges are generally regarded as safer than gas ranges due to the possibility of an individual's loss of smell and/or tendency to be forgetful. Ranges feature a side opening oven door, controls located at the front of the range, large numbers, and a light to

indicate when the range is turned on. The refrigerator is totally self-defrosting. Lighting, in addition to overall room illumination, is located over the range and between the base and wall cabinets.

### Bathroom

All bathrooms are basically the same design except for storage space. This is due to the fact that variation was difficult to achieve considering necessary size of a bathroom to accommodate a wheelchair, existing structural columns, existing windows and doors, general shape of the apartment, and the recommended close proximity of the bathroom to the bedroom. Showers were chosen instead of bathtubs for several reasons. Kassabaum (1962, p. 62) states that:

Although there is by no means unanimity on the preference for tub or shower, surveys show that more preferred showers than tubs, especially if seats could be provided. This is presumably because they are cleaner, more invigorating and safer (no high sides to cause falls and no danger of dozing).

McGuire (1972) believes that there will be an increasing demand for showers with each new generation of older adults. The shower incorporates the following features:

1. built-in light and ventilating system in shower ceiling,
2. controls located for easy reach from outside the shower to regulate initial water temperature,
3. showerheads adjustable in height for use while standing or sitting,
4. metal rails inside shower for support,
5. recessed soap dish, and
6. fold-down seat.

Except for one apartment (Figure 15), the showers do have curbs. However, these can be adapted to wheelchair use with the addition of a platform. An emergency button is located near the shower. When pressed, the emergency button also unlocks the front door. There is no inside lock on the bathroom door. A pocket door is used for all bathrooms to eliminate the possibility of a resident falling against the door so that it could not then be opened.

The medicine cabinet is not located over the lavatory but as indicated in each individual bathroom floorplan; mirror heights are adjustable. Lavatories and water closets are wall hung to permit the use of a wheelchair and for ease in cleaning. Shower and lavatory handles are an unbreakable lever type. In order to prevent the possibility of scalding, combination faucets are used with hot water controlled so that water temperature cannot exceed 110 to 115 degrees Fahrenheit.

Other safety features include the bathroom light switch located outside the bathroom door and non-slip flooring. Grab bars are usually recommended for installation by the water closet and shower. The author suggests, however, the installation of towel racks, curtain rods, and other fixtures likely to be "grabbed" that can support 300 pounds. Then, if and when specially designed grab bars are needed by an individual, they can be installed. It has been found that older people do not like to be reminded of infirmities and will attempt to cover up such obvious aides as grab bars (McGuire, 1972).

#### Circulation and Furniture Arrangement

Each apartment has been designed so that the circulation path is

simple and direct in order to minimize fatigue and accidents. Consideration was given to minimum walking in work areas, and a direct route from bed to bathroom and kitchen to dining area. Built-in shelving and storage systems are found in each apartment. This was a necessary addition in order to eliminate the hazard of existing structural columns being left untreated. The built-ins also provide an aesthetic function in hiding the columns. In Figure 14, the built-in shelf is eliminated from the bedroom leaving the corner column exposed. This is to illustrate that shelving can be omitted, if necessary, due to economic considerations. The bed can then be moved away from the window and a dresser placed next to the column. Both Kassabaum (1962) and Pepper (1961) agree that built-ins are convenient and also serve to free circulation paths from clutter. They warn, however, against designing too many built-in features which could produce a fixed, impersonal appearance. Older adults will want to bring as many of their own possessions as possible with them to a new environment. Apartments should offer space for the option of rearranging furniture when desired.

#### Lighting and Electricity

Due to failing eyesight, older adults need approximately twice the level of lighting as younger people. Rooms with more than one door should have three-way switches in order to turn lights on ahead before entering a room and turn them off without retracing steps. It is desirable to have a master switch by the bed. Light switches should have a luminous cover plate, be quiet, springless, easily switched, and mounted at approximately 38 inches from the floor. Due to difficulties

in changing bulbs and cleaning fixtures, there will be no ceiling fixtures in any apartments. Care must be taken to eliminate glare. There will be a nightlight located on the path from the bedroom to the bathroom. Lighting will also be provided inside closets and storage space. In an existing structure such as Stout Hall, there is little control over the amount of natural lighting except for the type of window covering used.

There will be an ample number of convenience outlets in order to avoid hazards created by extension cords and to facilitate flexibility in space arrangements. The recommended height of outlets varies with different experts. The author of this study recommends that outlets be placed two feet from the floor. This will minimize bending and be less obvious than outlets three feet high.

### Storage

Falls may occur when older people are attempting to reach shelves or closets that are too high. Therefore, reaching distance is limited to a maximum of 72 inches, and should be adapted to the height of the person living in each apartment. A variety of door types on storage areas is incorporated for experimental purposes. The amount of storage provided within each apartment may be inadequate for some residents' needs. However, there is ample space in the basement (see Appendix) for additional storage rooms.

### Doors

Doors must be given special attention due to the possibility of some persons having arthritic hands or being confined to wheelchairs.

Those doors leading into the apartments have lever handles, no double locks or chains, simple hardware responsive to a light touch, lighted keyholes, peepholes, doorbells, and personal identification symbols. Since the previously existing room doors were three feet wide, no change is necessary in width. All thresholds have been eliminated.

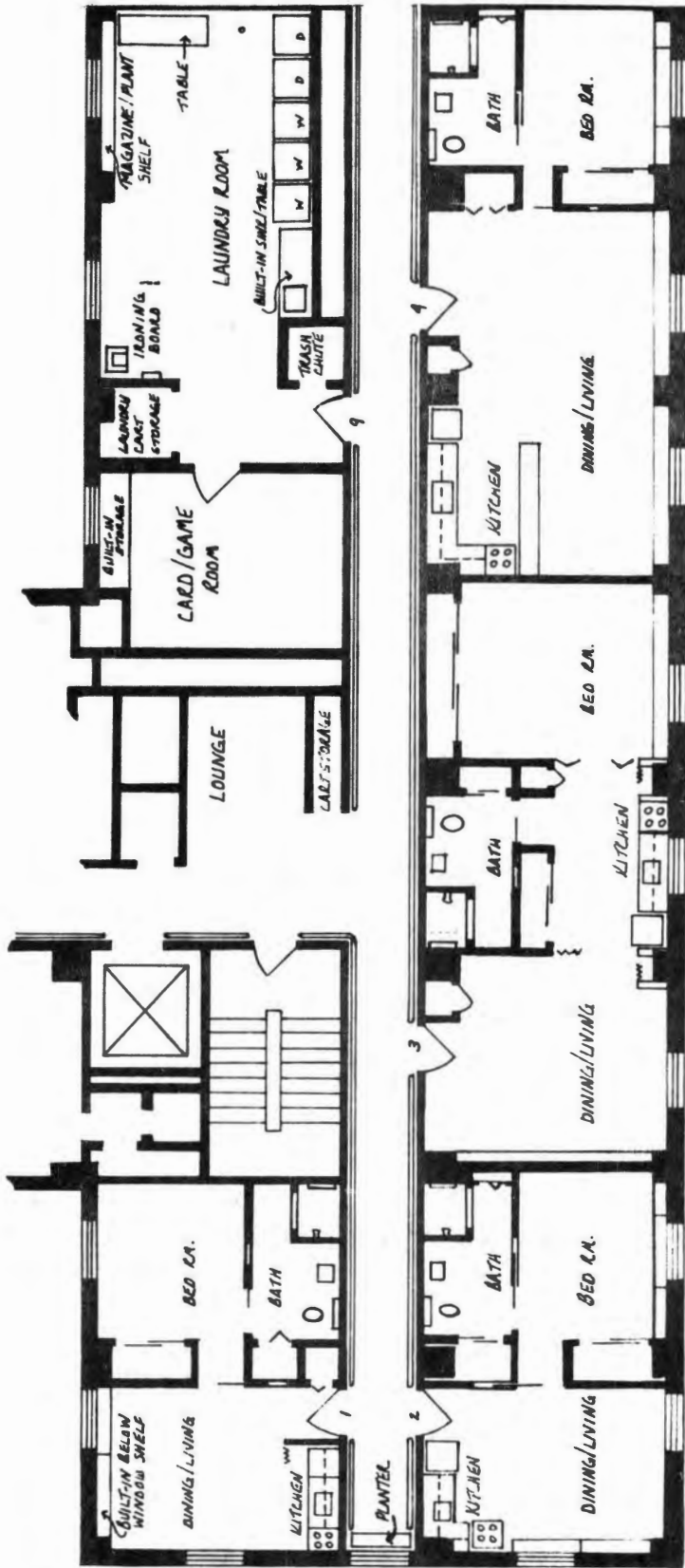
#### Communication Devices

In addition to the emergency alarm previously described for the bathroom, there should be one alarm accessible from the bed as well as the floor. Older people too often fall or sustain an injury and are unable to get help. It is also advisable to have a telephone outlet near the bed.

#### Development of Apartment Plans

In the typical wing (Figure 7) where the author has shown renovation possibilities, each apartment floorplan is different. Limitations of space did not allow as much variation when two existing rooms were combined into one-bedroom apartments (Figures 8, 9, 12, and 15) as when three existing rooms were combined (Figures 10, 11, and 14). The choice offered through different spatial arrangements will make possible further research and study into behavior and environment for older adults. Grant (1973, p. 2) states that:

It is not feasible at present to design or modify every unit in large-scale housing programs to fit an individual user; but it is feasible to develop varying units . . . within consistent sets of materials and processes and within given budgetary and site constraints, in order to create alternatives among which to choose. Repetitive housing units are often assumed to yield economies that perhaps do not exist, and to be forced by manufacturing and production necessities that perhaps do not exist either. Within fairly homogeneous





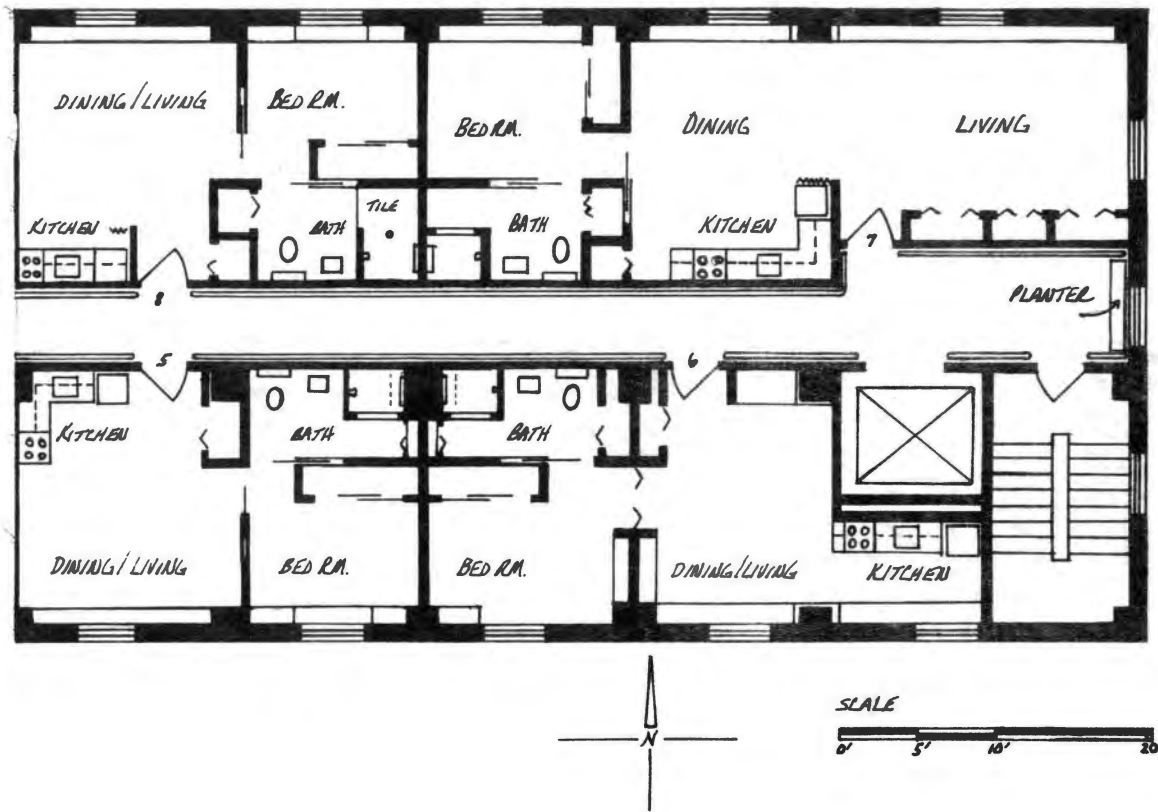


Figure 7. Floorplan Showing Suggested Conversion for Typical Wing of Stout Hall (Second and Third Floor)

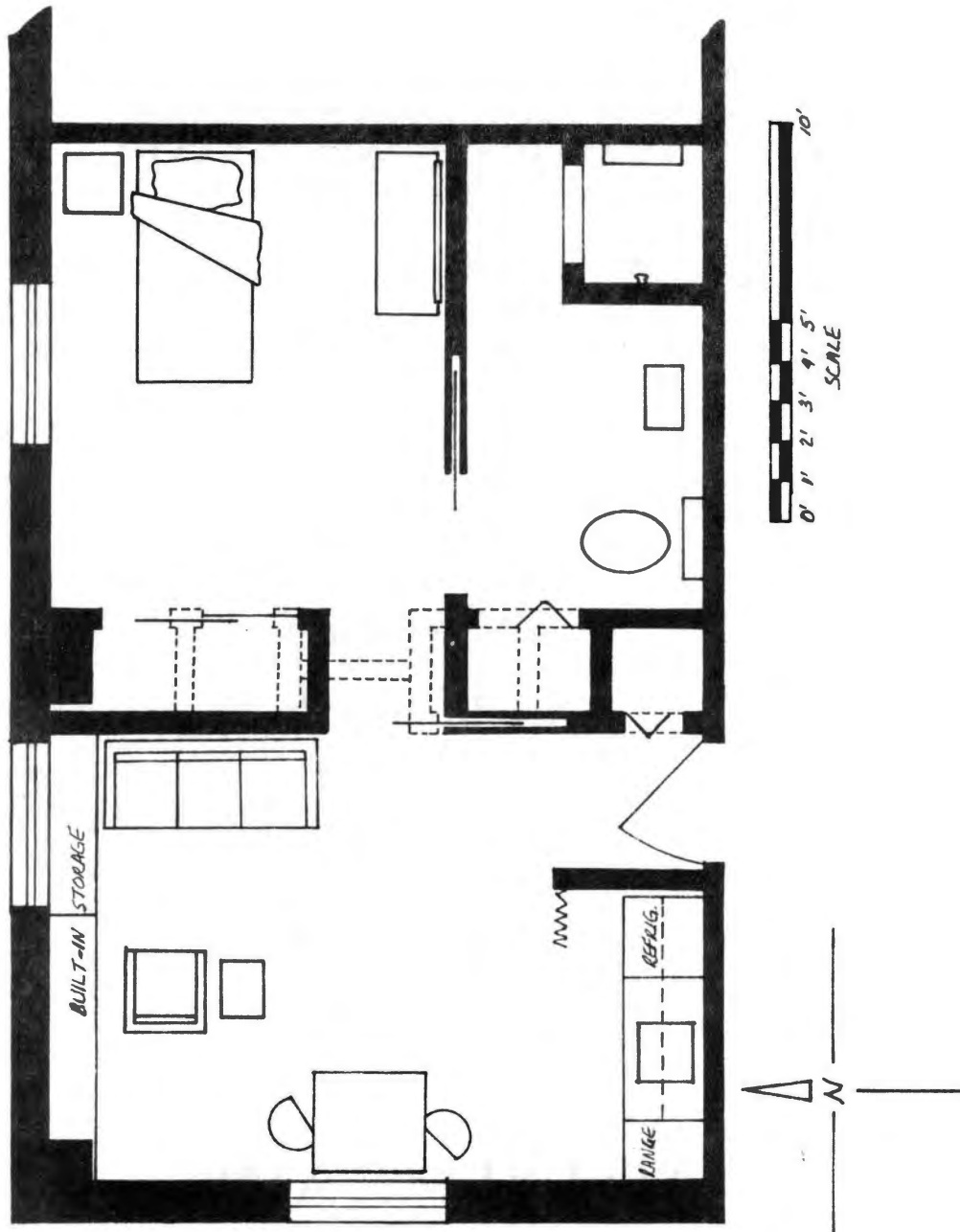


Figure 8. Apartment Plan Number One

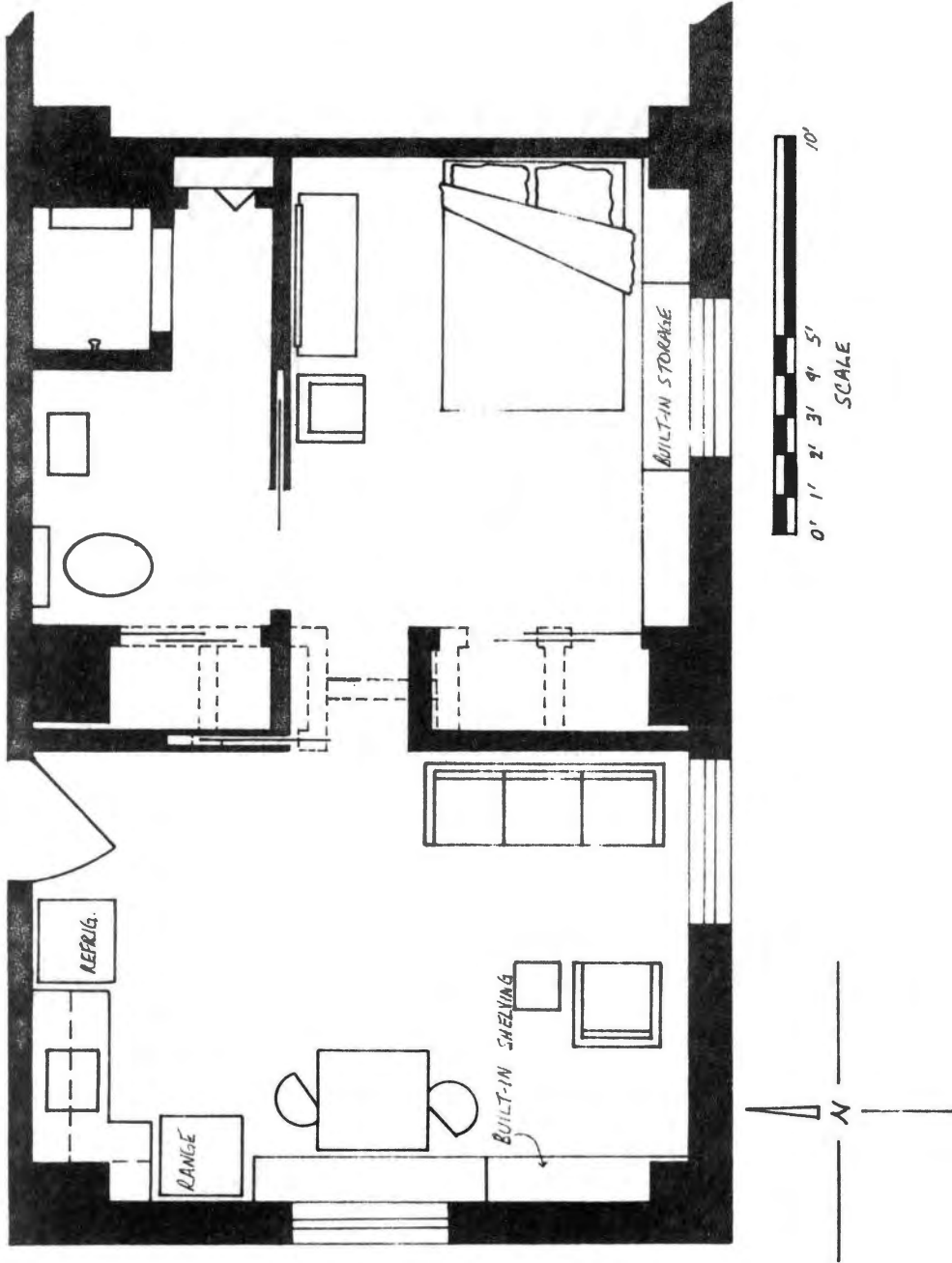


Figure 9. Apartment Plan Number Two

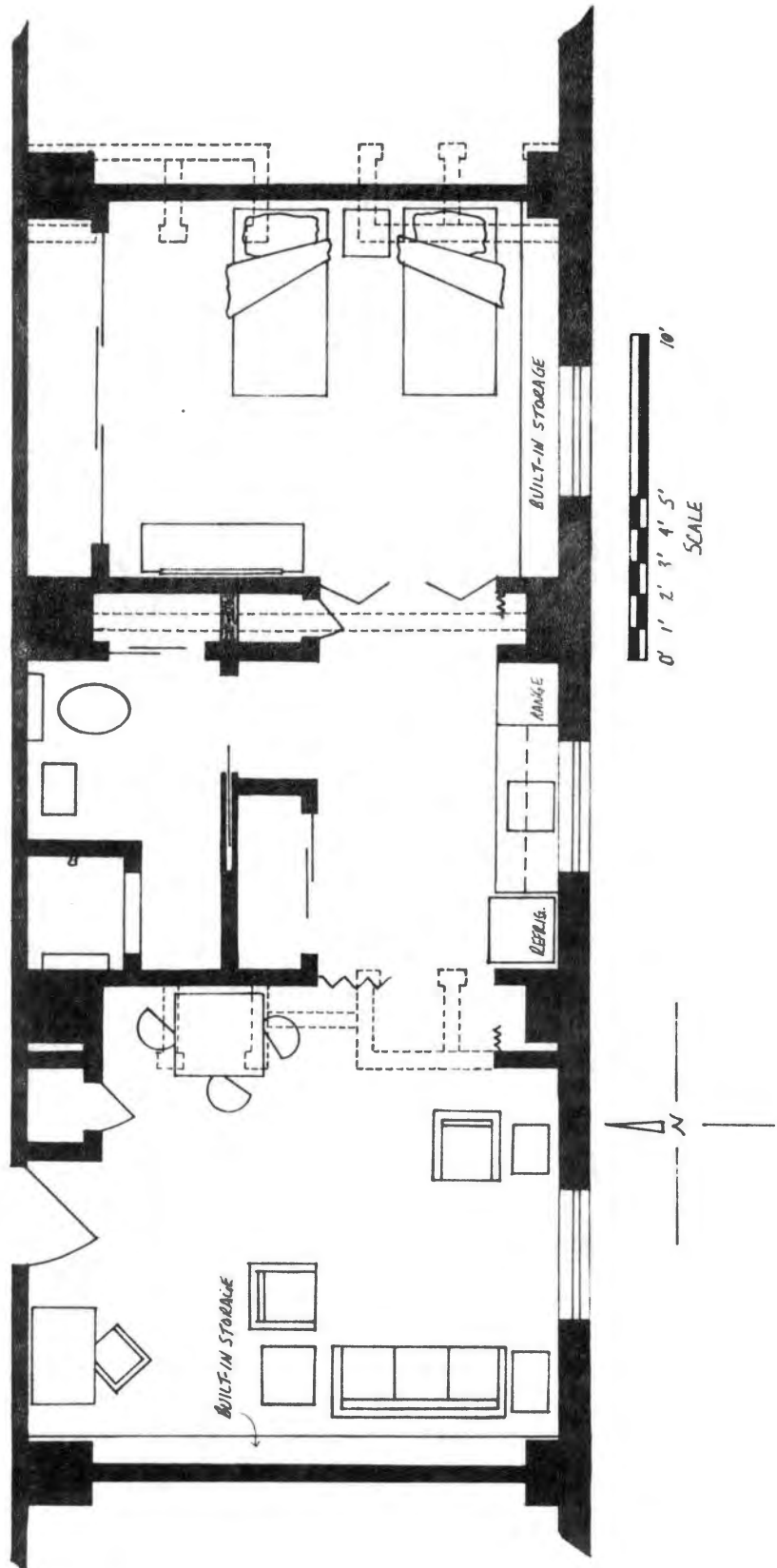


Figure 10. Apartment Plan Number Three

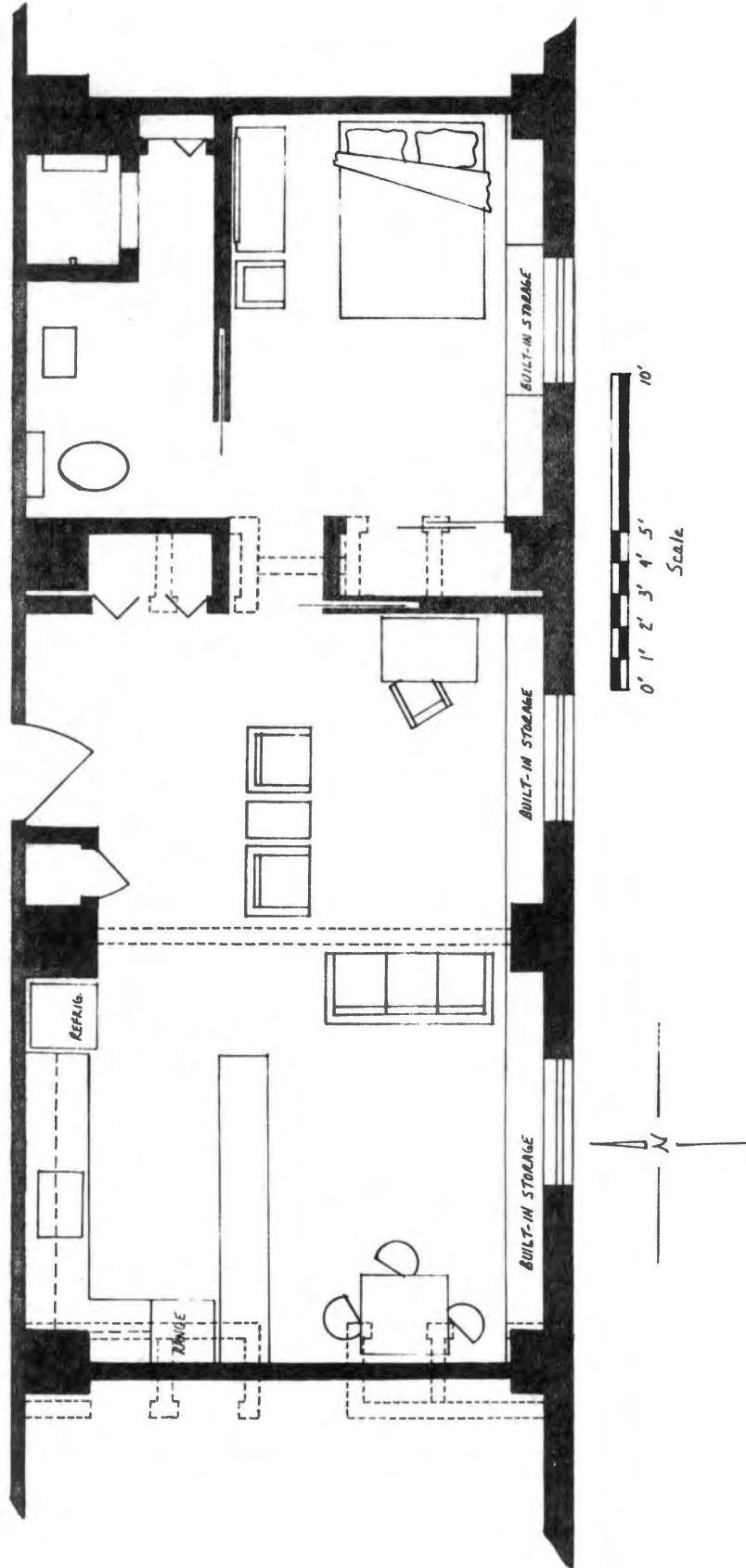


Figure 11. Apartment Plan Number Four

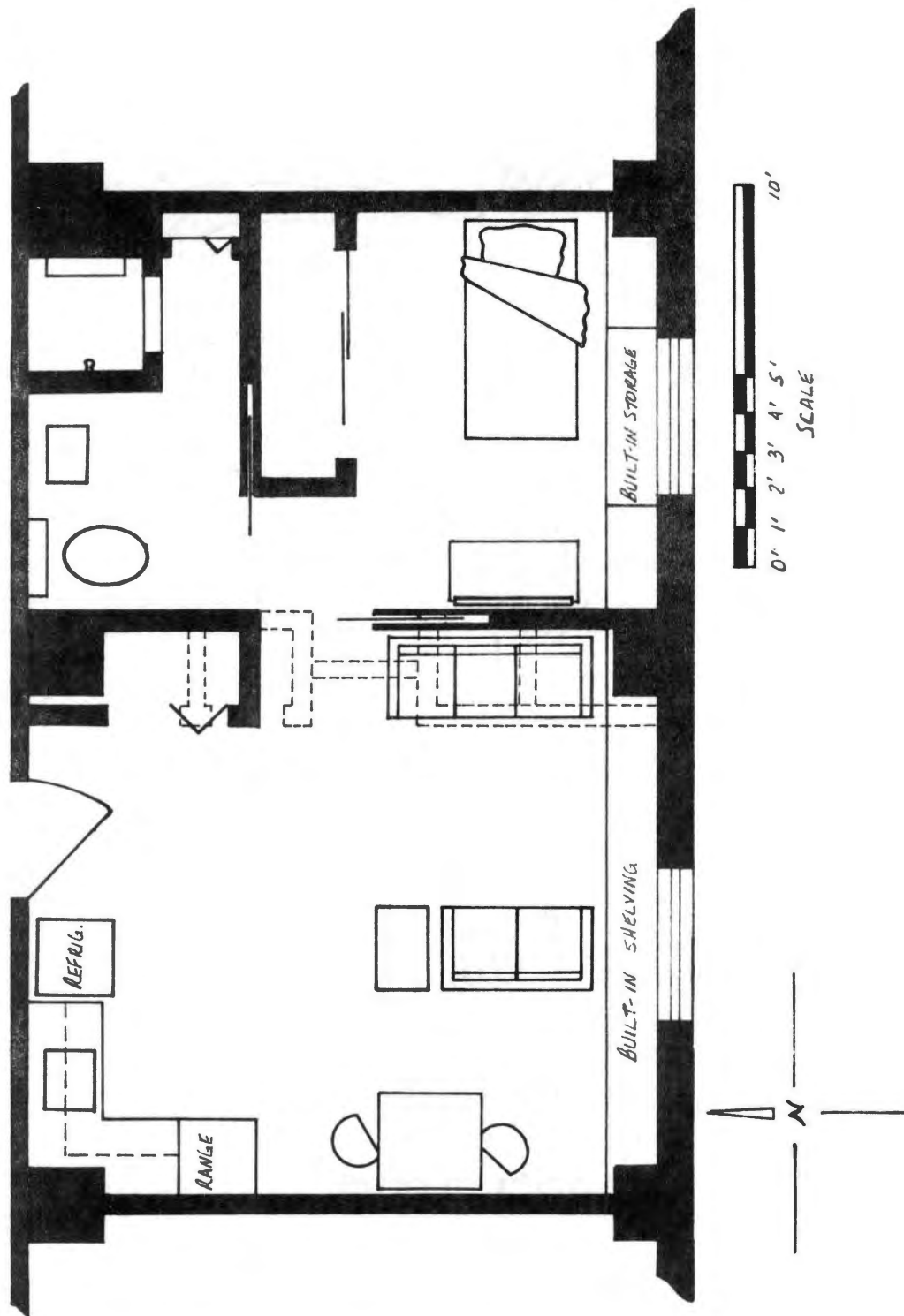


Figure 12. Apartment Plan Number Five

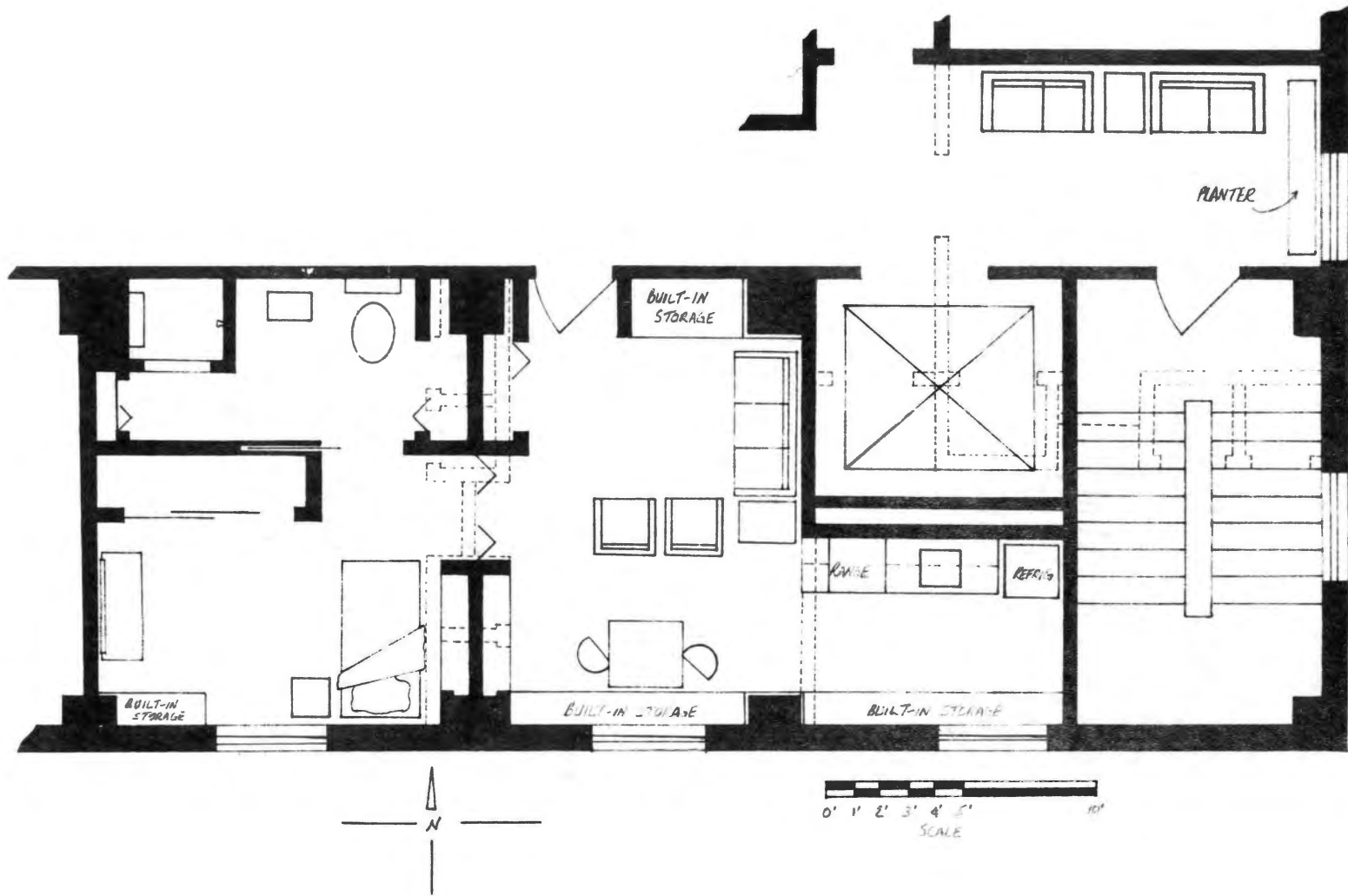


Figure 13. Apartment Plan Number Six

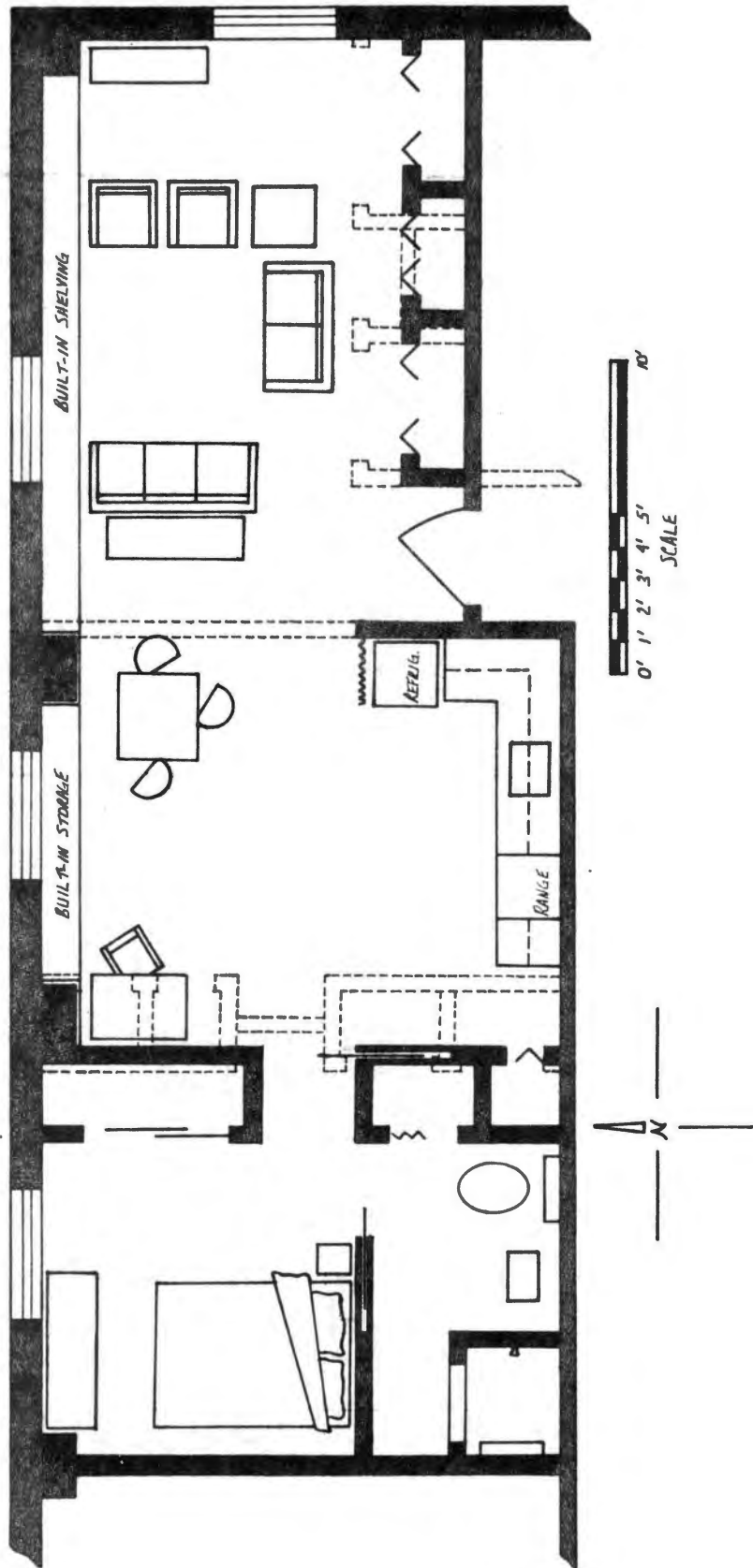


Figure 14. Apartment Plan Number Seven



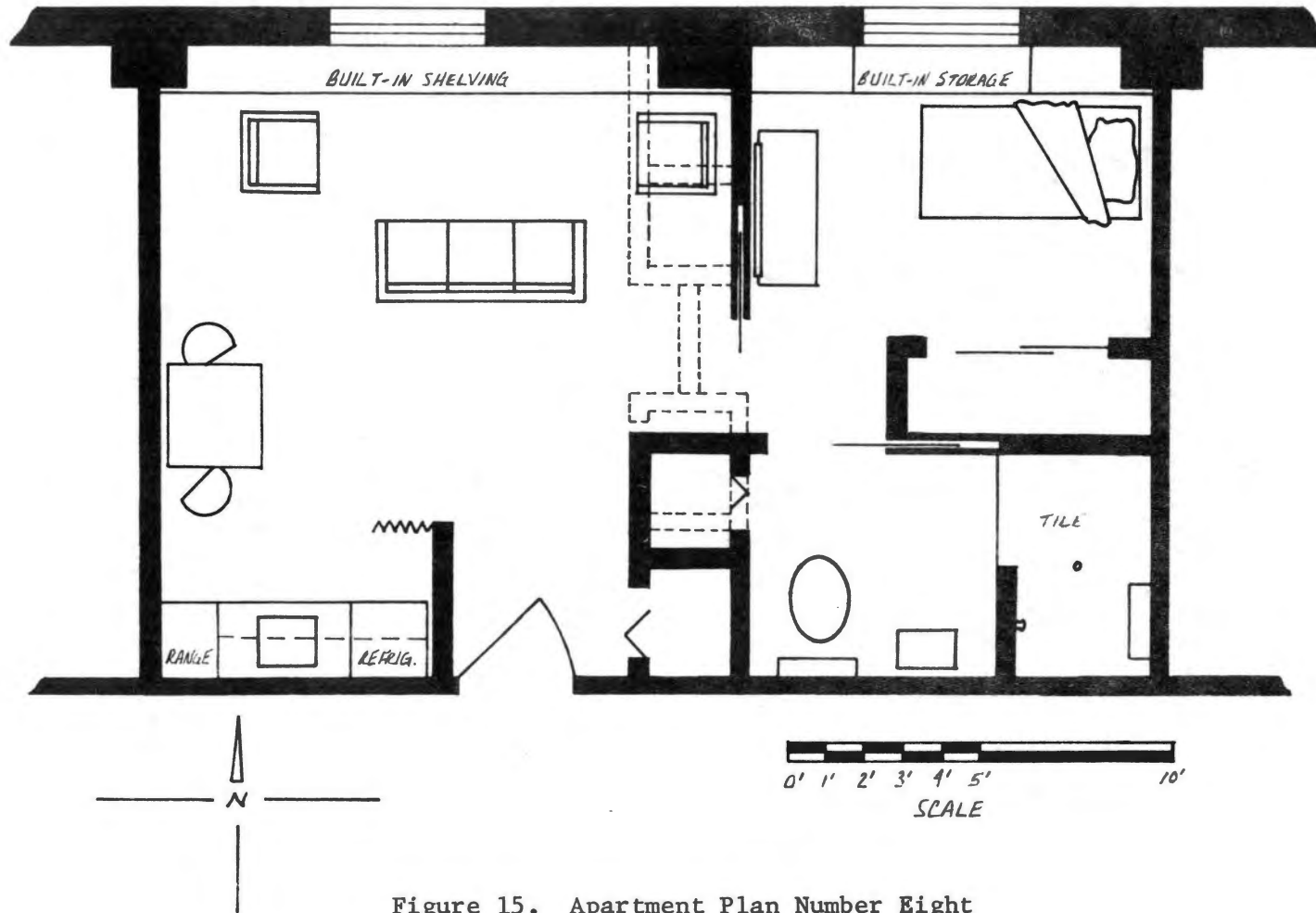


Figure 15. Apartment Plan Number Eight

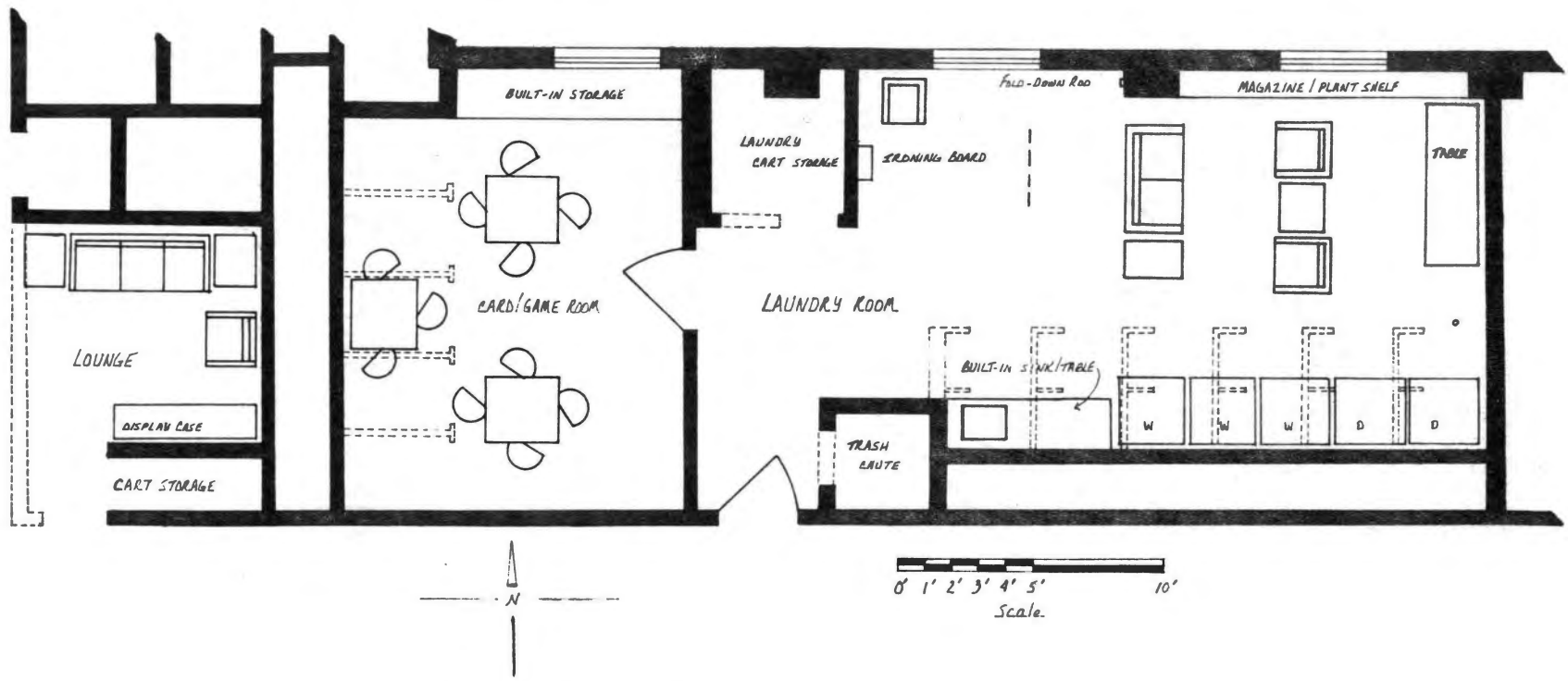


Figure 16. Laundry, Card/Game Room, Lounge Area

materials and processes, there can be wide variation in plan and form within a given group of dwellings and a given budget.

### Conclusions

The author contends, after exploring the possibility of renovating a typical wing and building entrances to Stout Hall, that it is feasible to convert existing dormitory rooms into apartments for older adults. The conversion plans show that it would be necessary to remove some existing closets and walls between rooms. The exterior walls, interior hallways, doors, windows, and structural columns can easily be retained.

Building access can be improved through the incorporation of outdoor ramps and a portico over the west entrances. There is the need for an additional elevator and stairs at the east end of the wing.

This study indicates that it would be beneficial for Oklahoma State University to explore the conversion of the other areas of Stout Hall into common areas for the older adults, office space, classrooms, and design laboratories.

## CHAPTER IV

### SUMMARY AND RECOMMENDATIONS

#### Summary

This study discusses the possibility of converting Stout Hall at Oklahoma State University into housing for older adults and an interdisciplinary gerontology study center. Interest has been shown by several departments on campus for an interdisciplinary approach to the study of gerontology. Support is provided by authorities in the field of older adult housing for the need for more extensive research by interdisciplinary teams. The need for additional alternatives in older adult housing for Stillwater, Oklahoma has been established by two previous studies.

The needs and special design considerations for older adults are discussed and related to the existing building. One wing on a typical floor is illustrated in detail to show how the spaces could be used and related to each other after conversion. Designs are justified and explained in terms of special criteria for older adult housing.

Building entrances are examined for necessary changes in building access by persons confined to a wheelchair as well as those with locomotion problems. Suggestions for change are discussed, explained, and illustrated with photographs.

### Recommendations

It is recommended that further studies be undertaken to document the feasibility of this study as to time and cost requirements for renovation. Should these further studies support the feasibility of converting Stout Hall, it is recommended that immediate steps be taken to begin the actual renovation process. It is also recommended that additional plans be developed for converting other areas of Stout Hall into common areas for the residents, management space, office space, classrooms, and design laboratories. Follow-up studies are recommended to determine the relative success or failure of the dormitory conversion idea. As of this writing, it may be possible that the Housing and Community Development Act (August, 1974) could provide some support for this type of older adult housing.

It is a concern of this author that residents' privacy may be abused by continuous, ongoing research studies undertaken by the interdisciplinary gerontology study center as well as other research groups on campus. Therefore, it is strongly recommended that participation by older adults living in the converted dormitory be strictly voluntary. Great care must be taken to insure that research efforts not interfere with residents' privacy. If it becomes apparent that it will be difficult to maintain privacy, it is further recommended that Stout Hall be used exclusively for a housing complex with possibly Murray Hall being converted into an interdisciplinary gerontology study center.

It has been shown by this study that the physical changes necessary to convert Stout Hall into older adult housing are possible. From this point, it is the author's contention that the success of such a

housing complex and interdisciplinary gerontology study center will depend upon the personnel involved and the method of operation. It is recommended that utmost care be taken with decisions regarding management and personnel.

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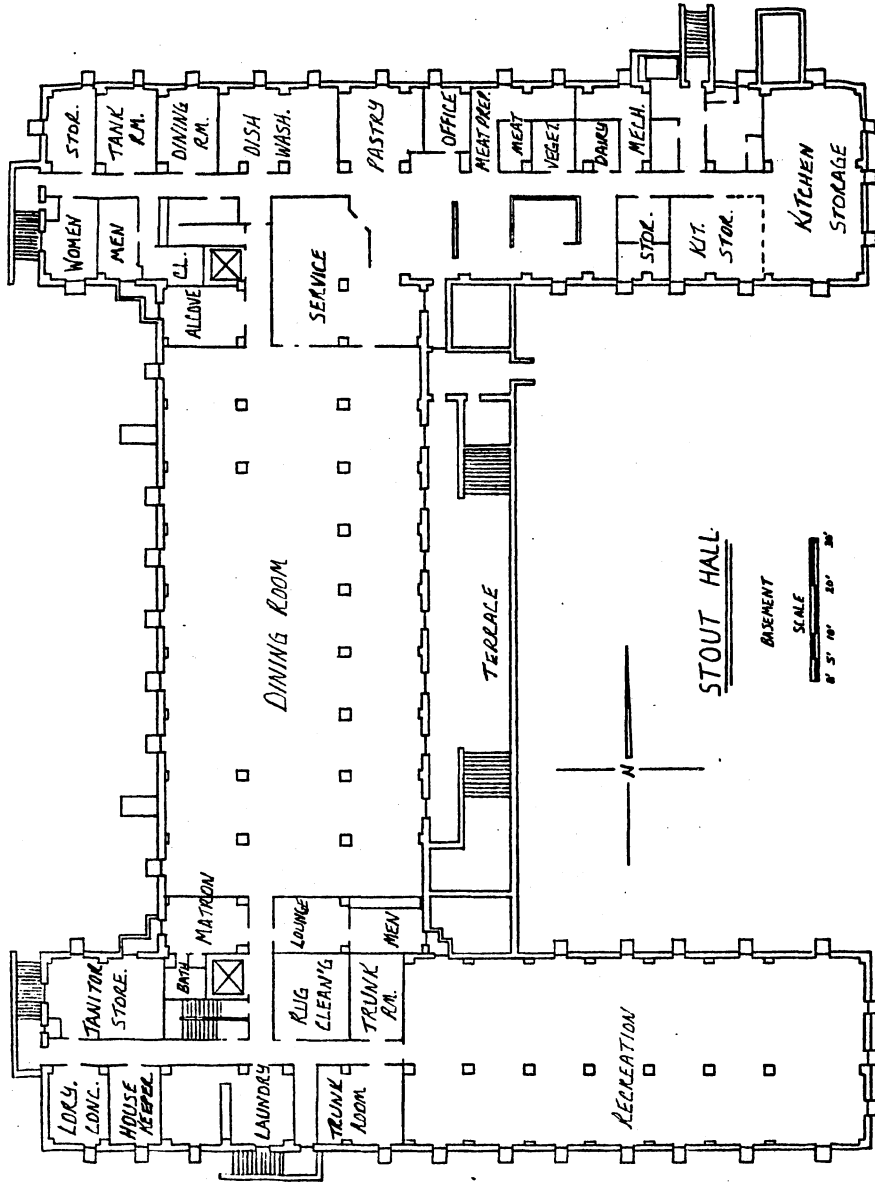
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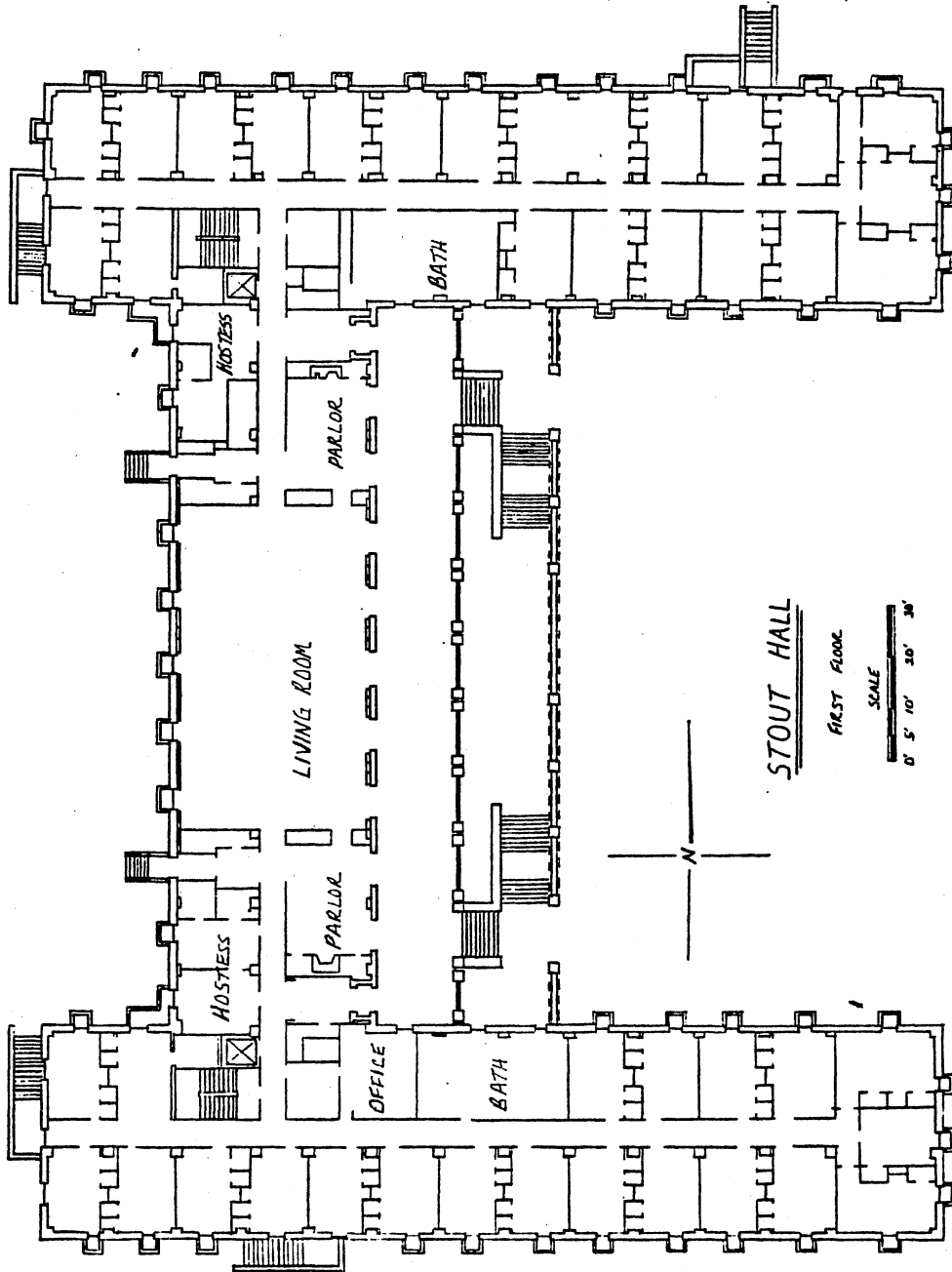
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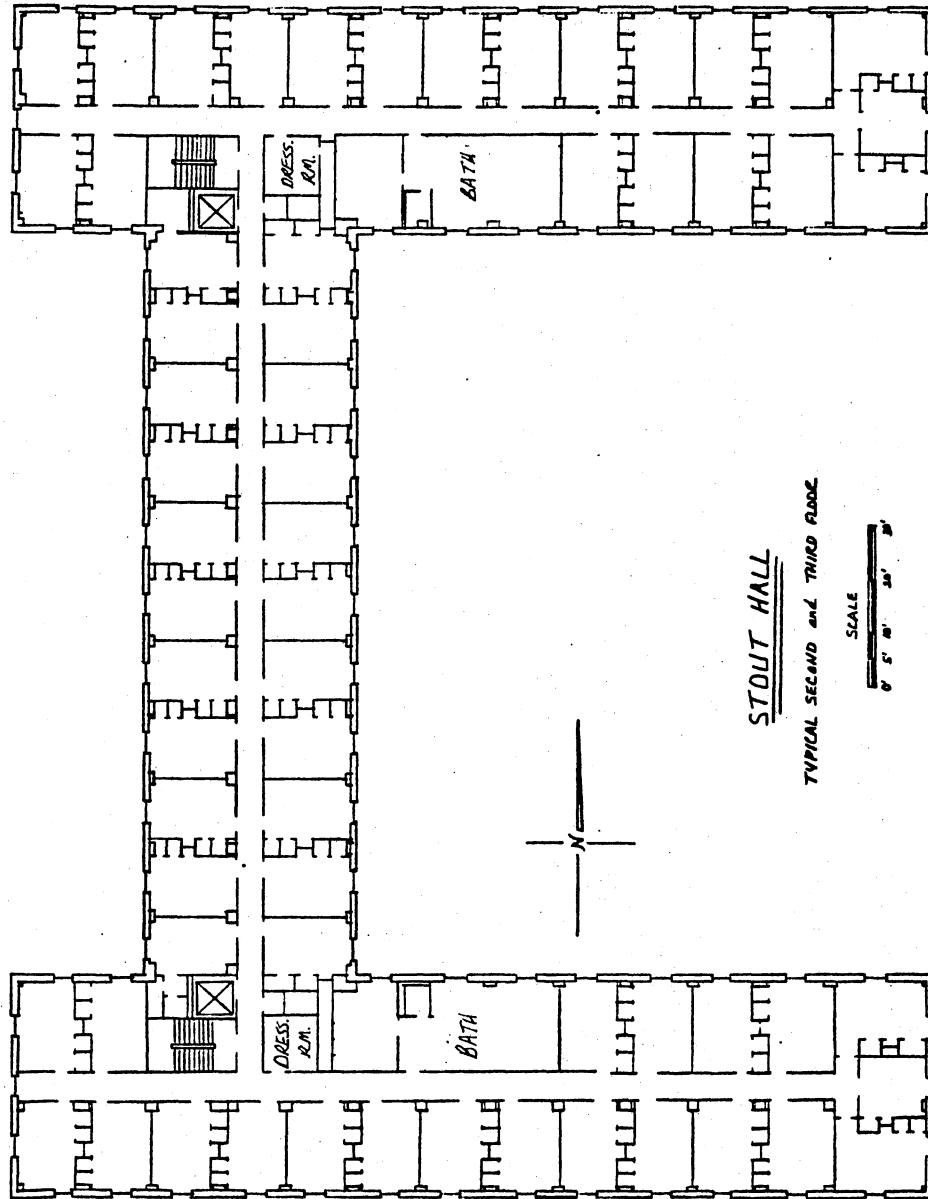
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**APPENDIX**

**STOUT HALL FLOORPLANS**

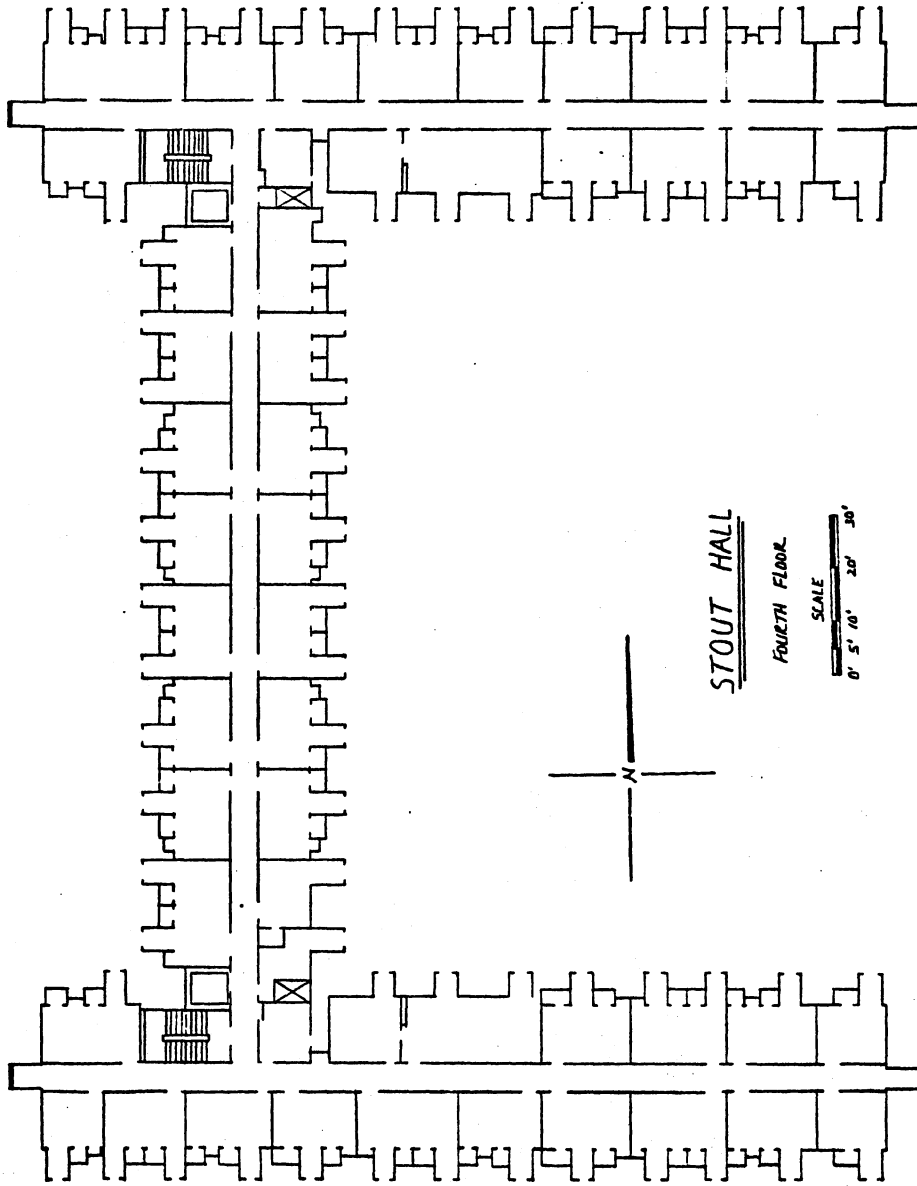






**STOUT HALL**  
TYPICAL SECOND AND THIRD FLOOR

SCALE  
0 5' 10' 20'



VITA<sup>2</sup>

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