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SERVICE AND DESIGN CONSIDERATIONS
IN THE
DEVELOPMENT OF HOUSING FOR THE ELDERLY

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STATE OF MINNESOTA

January, 1978

A Joint Effort by the
Minnesota Housing Finance Agency
and the Metropolitan Council

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I. INTRODUCTION

This booklet has been compiled to provide technical assistance to potential sponsors, developers, and designers of housing for the elderly in developing suitable housing environments for older persons. The purpose of the booklet is not to set specific design standards, but to provide a framework for thinking about housing and older people which emphasizes their special needs.

We have attempted to summarize a large amount of literature on housing for the elderly, and although there is controversy on some service and design issues, statements included here represent the widest areas of agreement within the literature.

The booklet contains the following sections:

1. A discussion of aging and the environment which provides a basis for following sections;
2. Special design considerations;
3. Accessibility of services - both within the building and in the community; and
4. An annotated bibliography, as well as other technical appendices to facilitate more in-depth study of the issues associated with housing for the elderly.

II. AGING AND ENVIRONMENT

A. The Aging Process

As individuals age, they experience physical, social, and psychological losses. Physically, older persons face reductions in vision, hearing, functional mobility, and (occasionally) mental competence. In addition, many older persons experience social/psychological losses such as widowhood, retirement, and the death of friends and relatives. Because of these losses, the older person often becomes more dependent upon the environment surrounding him/her for support, and the environment plays an increasingly critical role in determining the person's ability to remain independent and carry out daily activities.

This understanding of aging and environment is important if housing for the elderly is to be built which enables the residents to function effectively as they grow older and require more support from the environment.

B. Characteristics of the Elderly

The elderly population is not a homogeneous group. It is instead a combination of various subgroups which exhibit great variation in health status, income levels, marital status, and age-related attitudes and values.

Those commonly considered "elderly" generally range in age from 65 to well over 90. Within this group are individuals belonging to at least two distinct generations with different histories, life experiences, and attitudes. With respect to health status, over half say they have good health, reporting no illnesses which restrict their activities; even a larger number report no mobility restrictions. Yet, the elderly have a significantly larger proportion of functionally impaired individuals than any other age group (28,29).*

The data show that there are large numbers of women within the elderly population (64 men per 100 women in Minnesota), and many of these women are widows who are living alone. In rural areas, the data show that men tend to live almost as long as women, indicating that there are many aged couples in the rural areas and in small towns.

Income levels among the elderly vary substantially, although a disproportionate number of older persons have incomes at or slightly above poverty level.**

C. The Housing Environment

The characteristics of elderly housing environments are important. This environment includes the immediate building, its surroundings, and the physical and social characteristics of the larger community, as well as the services provided within the building. The physical environment includes such elements as climate, terrain, and the location of services (e.g., grocery store, bus stop, etc.). Social characteristics include the age and ethnic composition of the larger community, its attitude toward the elderly, and its location in either an urban, suburban, or rural setting. Services include anything offered to the resident provided by management staff, volunteers, or professionals from the community.

Most individuals are able to adapt to widely varying environments. However, as persons begin to suffer physical or psychological losses, the environment grows increasingly more important as one determinant of the person's behavior.

*See annotated bibliography for references.

**For 1977, the poverty level for a one person non-farm household in Minnesota is \$2,970; for a two person household it is \$3,930.

An environment can either contain services or physical design which can compensate for a person's loss of ability. For example, an elderly person confined to a wheelchair may depend upon the services provided by an attendant, or he may depend upon a supportive environment designed with ramps, elevators, wide doors, and other design features which allow the individual to function alone. In elderly housing it is important to design housing environments which integrate design and services in an effort to maximize the capabilities of individuals living in such environments.

The importance of matching housing environments with the abilities of the residents should also be mentioned. When "highly competent" persons live in highly supportive environments, they may become bored and allow their skills to atrophy causing unnecessary physical declines. On the other hand, persons of "low competence" living in challenging environments may become "handicapped" and defeated by environments in which they cannot adequately function.

While it is fairly clear that one cannot hope to design an environment which is perfectly tailored to every individual's needs, it is possible to design housing which allows persons to grow old without being severely handicapped by the environment. In some cases, it will be necessary for individuals to move from one environment to another (from a specially built housing unit to a nursing home, for example). Yet in many cases, a well designed housing development can provide a variety of service levels and support to allow individuals of various capabilities to function as independently as possible.

III. BUILDING DESIGN

The actual design of elderly housing can make a building safe, accessible to those that are disabled, and psychologically supportive for those elderly who live in the building. While these three qualities (safety, accessibility, and psychological impact) are each important by themselves, they are inter-related as well (10,11,14). For example, if housing is designed with only the safety and accessibility of the residents in mind, it may not be liked by the residents because it is not appealing or comfortable to them.

In other words, the residents should feel at ease and comfortable in all parts of the building with the building designed to meet the residents' physical, emotional, and psychological needs. This includes the individual unit, all community spaces, as well as the outdoor space.

Before designing an elderly housing development, a thorough knowledge and understanding of the applicable requirements is needed. The federal and state codes which apply to the construction of housing for the elderly are compared in Appendix III. While these codes are minimum requirements, the needs of many elderly persons require environments which provide additional support and comfort. The design suggestions detailed here go beyond the minimum requirements in order to provide suitable housing environments for elderly persons with different levels of need.

A. General Considerations

Housing for the elderly can take a variety of forms.* The specific type finally chosen will depend upon the site, the larger community setting, land costs and other economic considerations, and the preferences of potential elderly residents.

1. Type of Structure.

There are four basic housing types which can be developed for use by elderly residents. These include: 1) high and mid-rise buildings; 2) low-rise apartments; 3) single-level buildings; and 4) townhouses. Each building type has particular advantages and disadvantages which are briefly summarized in Table 1. The type of structure chosen will depend upon the demand for units and the nature of the site chosen.

2. Number of Units.

The size of a development influences: 1) the amount of common and special-use space which can be provided; 2) the degree of competence required of tenants; and 3) the level of services which a development can support (21).

a) Small Developments (15 to 50 units)**

In many rural areas or small towns it is difficult to construct large-scale housing because of density factors. However, a small-scale development may be feasible. In very small developments it is more difficult to provide common space and on-site provision of services. The tenants of such units must be more independent if services are not available. There is evidence to show that few group activities occur in small developments. Therefore, it is essential that residents remain a part of an ongoing social network outside of the housing development (21).

*This discussion is limited to multi-family elderly housing.

* *Unit numbers are based upon a variety of references in the literature and information gathered through interviews with housing managers.

TABLE 1

COMPARISON OF THE ADVANTAGES AND DISADVANTAGES
OF MAJOR ELDERLY HOUSING TYPES

<u>Housing Type</u>	<u>Advantages</u>	<u>Disadvantages</u>
I. High-rise/Mid-rise buildings (High-8 or more stories, Mid-rise-3 to 8 stories) This building type is most able to provide a variety of levels of support for a range of elderly needs.	1. Higher densities reduce per-unit land costs. 2. Reduced land costs offset high per-unit construction costs. 3. Compact design facilitates service delivery and reduces operating costs. 4. Requires little land thus facilitating placement near services. 5. Controlled entry gives greater security. 6. Sheltered circulation areas make it easy to interact with neighbors.	1. Generally not preferred by most elderly persons. 2. Residents often fear entrapment in a fire. 3. No direct access to outdoors. 4. Difficult for elderly to retain orientation with surroundings.
II. Low-rise buildings (2 or 3 stories) Building type best suited for independent elderly in some cases may be suitable for more dependent persons.	1. Low construction costs. 2. Easy access to outdoors. 3. Low construction costs may permit fairly high densities. 4. Usually more similar to former residence than high-rise apartments. 5. Greater possibility for semi-private outdoor space.	1. May require larger site. 2. Stairways may force second story residents to make premature move. 3. More difficult to support common facilities within building. 4. Security may be more difficult to maintain, especially in outdoor areas.
III. Single-level buildings (1 story) Building type suited only for independent elderly.	1. Covered circulation area and sheltered entry ways. 2. Easy access to outdoors. 3. Low per-unit construction costs. 4. Provides private outdoor space for each unit.	1. May require larger site. 2. Difficult to support common areas and services. 3. Difficult to provide effective security.
IV. Townhouse* (1 or 2 stories) Building type suitable only for independent elderly able to use stairs.	1. Similar to those of single-story garden apartments with exception of sheltered entrances. 2. Individual entrances make units more personalized.	1. Similar to those of single-story garden apartments with the addition of unsheltered entrances and the interior stairs found in most townhouse units. 2. Requires outside circulation areas.

Source: Based on material contained in: Michigan State Housing Development Authority, Housing for the Elderly Development Process, 1974.

* Note: Townhouses are differentiated from single level buildings in that each unit opens directly to the outside with no common interior corridors or entrances.

Residents of developments in small towns are generally well-integrated into the community and supported through an informal service structure. This may help to offset the lack of a formal service structure.

b) Medium Developments (50-150 units).

Developments of this size are generally able to support common spaces and some on-site services. On-site management is necessary along with a capacity to provide "social activities only" up to the "moderate level of services." In developments of this size, building type becomes important. Larger, low-density developments may sprawl to the point where residents may not be able to make full use of a centrally located activity area. When multi-story buildings are built, it is important that elevators be provided.

c) Large Developments (150 units or more).

These developments are able to accommodate the widest range of capacities of elderly tenants. Ideally, supportive services can and should be provided on site which will allow elderly residents to remain there as long as possible. A variety of common spaces should be provided as well. (Some have suggested that developments with more than 200 units should not be encouraged since the potential for management problems and isolation of residents increases) (21).

Since the size of a development is limited by market and economic factors, it is essential that the developer thoroughly understand the needs of the tenants who will occupy the housing. Knowledge of community services is also essential.

B. Design of Community Space

"Community space" in a housing development refers to all areas inside the building that are shared and made available to the residents. All community spaces should be easily accessible, safe, well-marked, and offer the potential for social interaction. When these spaces are also going to be made available to senior citizens from the larger community, it is important that residents in the building be made aware of this. Design features, such as additional public entrances to these spaces, can facilitate this awareness.

The discussion below defines specific community spaces and describes how these areas should be designed. Not all developments will be able to provide each of the common areas discussed here. Yet an understanding of these suggestions will assist the developer in designing appropriate spaces.

1. Lobbies.

Because many older people do not participate in activities but rather experience them by observation, the lobby can serve a social function in addition to one of circulation.

Multiple unit buildings (except townhouses) should have one public entrance,* and the lobby should be located immediately inside of the main entrance. It should be planned with some sitting in mind because research shows that elderly residents will use a lobby as a sitting area whether or not the designer intended it (20). There should be room for a number of persons to sit without obstructing circulation or creating a hazard to other tenants. The area should provide direct physical and visual access to other common areas including lounges or community rooms, management or other offices, elevators (if any) and mailboxes (18). The outdoors should be visible from the lobby, and chairs should be furnished to be used when an individual is waiting for a ride or simply wishes to observe passers-by. The exact size of the lobby will depend upon the size of the housing development.

2. Community Rooms.

Community rooms (also called multi-purpose rooms or activity rooms) are large rooms where group activities can take place. Whenever possible, housing should be designed with at least one room large enough to hold the entire population of the building at one time. Because community rooms are intended to function as activity centers, they should be centrally located and conducive to holding meetings, social gatherings, and a variety of other large-group activities. They may be designed with several niches so that different activities can take place simultaneously without interfering with others.

In smaller and medium size developments, these rooms should be flexible with some movable partitions which allow multiple use of space. Storage areas should be provided for some furniture, recreational equipment, and coat storage for visitors. A small kitchen area should also be provided. In larger developments where single-purpose rooms are feasible (e.g., craft rooms), these should be located near or adjacent to the activity

*Other doors should be used for egress but not for access to the building because of security reasons.

room. Given the preferences of many elderly persons to observe rather than actively participate, it is often desirable to provide a means of observation (a window or adjacent lounge area). Care should be taken, however, to afford some private spaces for individuals who do not wish to be "on view" (18).

In developments providing a moderate or maximum level of services, activity rooms should provide opportunities for persons with varying levels of competence. Furnishings should be accessible to wheelchair-bound individuals and others with mobility limitations.

3. Lounges.

Lounges are group sitting areas. They are most "successful" when they are placed within visual range of other activity areas such as the elevators, the entry to the building, or the mailbox area (21). In addition, they should provide seating for not less than 10% of the population of the building (18).

Because many elderly persons find it difficult to sit in low chairs or on hard benches, furniture for the lounge should be chosen to maximize an individual's competence. Chairs and couches should provide support, have sturdy arms which can assist a person in making the transition from standing to sitting and vice versa, and should be readily movable to facilitate placement into conversational groupings by the residents (11,14,18,21,22). Extremely hard surfaces should be avoided.

4. Mail Areas.

Mail time is an important social event during the day. In many multiple unit buildings, residents often congregate near the mailboxes well in advance of the arrival of the mail. Thus boxes should be located near the lounge or lobby area where persons can wait for the mail. Research has indicated, however, that the mailboxes should not be placed in a circulation area and should not be fully visible from a lounge so as to allow some privacy when picking up mail (21). Boxes should not be located outside of the building for both safety and security reasons.

The boxes should be large enough to accommodate newspapers and magazines, and mailbox numerals should be large enough for those with visual impairments to identify them. Space should be provided in the management office for pick-up and delivery of parcels. If possible, a mail room should be provided to enable mailboxes to be filled from the back.

5. Management Office.

All developments should have a management office. It is best located on the ground floor with visual access to the entry. When possible, its location should be near the caretaker's unit and also include visual access to the community room, the lobby, and the mail area. The use of large glass windows or doors to the management office can display a welcoming quality as well as provide an opportunity to survey other activities. More office areas may be needed depending upon the size of the development and the level of services to be offered.

6. Laundry Areas.

The laundry area is another part of the building which can facilitate social interaction, so it should be designed with both its social and utilitarian functions in mind. It should have: 1) proper ventilation; 2) high levels of illumination; 3) space for folding tables, ironing boards, and room for maneuvering with a walker or wheelchair; 4) comfortable seating; and 5) noise-deadening acoustics in order to facilitate conversation while machines are running. Washing machine and dryers might be placed in a semi-private part of the area for those who don't wish to do their laundry in the view of others.

Because elderly residents may have reduced strength and stamina, the laundry should be centrally located in order to minimize the distance that one has to carry one's wash. In buildings with elevators, a shelf or seat in or near the elevator may be provided to allow residents to set down their laundry.

Special care should be taken to provide a location for the laundry which does not require one to go through the lobby with one's wash (18).

7. Corridors.

All corridors should be sufficiently wide to facilitate circulation of both ambulatory and wheelchair-bound residents. Handrails may also be provided in corridors depending on the needs of the building's residents. Because corridors can set the tone for the building, such features as handrails, lighting, and floor treatments should be carefully chosen so as not to create an institutional environment. Because long corridors which all look alike are often confusing to older persons, they should be avoided whenever possible (21). Unit entries can be recessed to modulate this length.

Research has shown that older persons negotiate their environment by use of "landmarks" (for example, furniture

groupings or apartment doors individually painted in different colors). Attempts should be made to incorporate "landmarks" within larger developments to orient residents (35). Colors, easy-to-read signs, textures, and changes in directions of corridors are all techniques which may be used to reduce ambiguity.

8. Elevators.

Elevators are important in all multi-story housing developments. The number of elevators should be appropriate to the size of the building. Control buttons (both inside and outside of the elevators) should be within reach of both ambulatory and wheelchair-bound persons (e.g., no more than 4'8" high) (3). Handrails should be provided around the inside of the elevator. A shelf or folding chair might also be provided. The doors should open and close slowly, and the reopening sensor should respond quickly. In addition, the area immediately adjacent to the elevator should be well-marked indicating the floor and directions to the units.

9. Balconies.

The inclusion of balconies in an elderly housing development will depend upon the type of building and the financial feasibility of including them. Research indicates that common balconies are not used extensively but do provide pleasure for a small number of residents. Individual balconies, however, are used very extensively when they provide some feeling of enclosure.

C. Design of Outside Space

Many older people are used to spending time outdoors, and this should not change when moving to an elderly housing development. Continued outdoor activity can be encouraged by designing safe, accessible, and visually pleasing outdoor areas.

1. Outdoor Recreation Areas.

Outdoor recreation space should be easily accessible from the building and should be protected from (or separate from) adjacent properties or roads. It should provide space for both active and "passive" activities. It is perhaps best to design outside space in a way that will provide flexibility so that residents' preferences can be followed in planning activities rather than designing outside space for specific purposes (21).

2. Sitting Areas.

The majority of the outside area will probably consist of walkways and sitting areas. The sitting areas should be designed with three factors in mind: 1) the variations in weather; 2) a location with a view; and 3) the physical design of the seating itself (11). Taking into account different weather situations, sitting areas that provide sun, shade, and/or wind protection should be provided. The location of the seating should provide some type of view either of landscape or pedestrian traffic. However, it should be designed and located with the security of the residents in mind.

The physical design of the seating should take into account both aesthetic and functional considerations. Some fixed seating might be provided but arranged in such a way that additional lawn chairs might be included.

Benches designed for two people are the best for encouraging social interaction since it is more difficult to converse if three or more people are sitting in a straight row. A few two-person benches should be "isolated" for privacy; and, of course, a person wishing to sit alone can always sit in the middle of the bench. Benches set at right angles encourage small group socialization while U-shaped arrangements work well for larger groups (21).

The seat and back of the bench should not be made of concrete since this is uncomfortable. A bench should never be made without a back. The seat of a bench should be relatively shallow and not slope from front to back. When sitting on the bench the knees of the seated individual should not be higher than his/her waist (11,14).

3. Entrances and Exits.

The entrance to the housing development should provide adequate viewing distance in both directions. Lighting should be provided so as to insure an even level of illumination and prevent glare (21, 35, 36).

If the entrance must be on a busy thoroughfare, an apron or slow-down lane should be provided. If the main entrance is located on a side street, properly marked and easily seen arrows should be incorporated to provide orientation to the entrance of the building. The

provision of an entrance drive depends on the size and shape of the site, the type of roadway entrance, and the traffic characteristics along adjacent streets.

The space just outside the main building entrance should permit easy access from the street and should be covered either by a canopy or building projection. It should be well-lit with an even distribution of light. A waiting shelter for public transportation or outdoor furniture might be provided at the entrance of the building.

4. Parking Areas.

The parking area for the residents should be close to the entrance of the building. In addition, the walkway between the building entrance and the parking site should be well-lit. If some dwelling units are on the same elevation as the parking lot, the lot should be placed at some distance from the unit.

The provision of handicapped parking spaces is now required; it may be helpful to provide more than the required number of such spaces. The number of parking spaces should reflect local zoning requirements as well as the parking needs of the residents.

5. Outdoor Service Area.

The service area is the space provided on the site for regular delivery of products for the services in the building or for maintenance of the building. This area should be located so as to not disrupt the residents in their daily living activities.

The area should be located away from the main entrance to the building, the outdoor recreation facilities, and any adjacent residential property. This service area might also provide separate access to an elevator to facilitate the moving in and out of residents.

D. Design of the Unit

The elderly spend a large proportion of their time in or near their housing units. Thus, the design of the unit is of utmost importance to the well-being of older residents.

1. Type of Unit.

In general, efficiency and one-bedroom units have been standard in most housing developments for the elderly. However, according to the literature on housing preferences of the elderly, preference for efficiency units is decreasing rapidly as older persons find that they have alternatives to these types of units (21). An efficiency unit, for the most part, does not give the resident adequate space or privacy and is now strongly discouraged in most types of developments.

Opportunities for privacy and social interaction fulfill important human needs. Since elderly residents spend so much time in their units, areas for each type of activity should be spatially separated. For example, the ability to entertain or socialize with family or friends in a living room rather than a living/bedroom often encourages older residents to maintain such visits (5,6, 11, 12). The provision of a separate bedroom helps give the individual a sense of privacy and dignity.

Thus, it is wise to provide a majority of one-bedroom units in housing for the elderly. In addition, a number of these one-bedroom units should be designed for occupancy by two persons. This is particularly true in rural areas since research shows that there is a higher percentage of elderly couples in these areas than is found in urban areas (2). A limited number of two-bedroom units may be included in the development as well.

It has been pointed out that tenant conflicts may be reduced if similar units of similar size are provided to all tenants. Only when there are special circumstances (e.g., married couples or handicapped persons) can larger, more desirable units be rented without arousing feelings of unfairness in other tenants.

a) Psychological Factors

There are a number of psychological factors which relate to the design of a housing unit for the elderly. An important need expressed repeatedly is the need for an environment which makes the individual feel competent (14, 21). Competence includes the ability to master at least a portion of the environment. While there may be physical limitations which restrict elderly persons in relation to their environment, feelings of diminished self-worth or competence can be reduced through careful design.

Mastery of the environment includes the ability to have some control over personal space. Design features which encourage such individual control include recessed entrances which can be decorated or personalized in some way, the use of nameplates, individual lights, or choice of door colors which can give a sense of control to an elderly tenant.

Within the unit, control of personal space is more crucial. Dual drapery rods may be installed to allow residents to hang their own drapes on the interior rod while allowing the management to supply drapes or shades in the bedrooms or other rooms.

In addition, walls should be made of materials which encourage residents to hang pictures. One way to allow for picture hanging while minimizing possible damage is to provide picture moldings or other similar devices.

Feelings of competence are closely related to the maintenance of a positive self-image. While many older persons are able to maintain a good self-image, some may become depressed easily. The literature on environmental design indicates that there are environmental components which can assist persons in retaining a better image of themselves. Strategically placed mirrors have been found to be related to improving some persons' physical appearances (10, 14). The reflected image gives constant psychological feedback to residents.

The degree to which a supportive environment is made to resemble a residential rather than an institutional setting is also important in maintaining a positive self-image. While grab bars, handrails, and other prosthetic devices should be used in elderly housing, these devices should be made as unobtrusive as possible. For example, it has been possible in some cases to reduce the number of grab bars in a bathroom by substituting towel bars which meet the same strength specifications as grab bars.

Many elderly persons desire a feeling of continuity in their lives, and movement into housing for the elderly is often viewed with apprehension by new residents. For this reason, the design of units should permit a resident to furnish it with as many cherished possessions as possible. Abundant storage space should be included for other possessions as well. Research indicates that when life-long possessions can be retained by elderly people, feelings of continuity are enhanced (5,12,13,14).

The psychological needs of aging include the need for feeling at least passively involved with one's surroundings. It has been pointed out previously that older persons often participate passively in activities by sitting and watching the activities of others. Units can be designed to foster passive participation in outside events.

Windows should be large enough and low enough to enable older persons to view outside activities through the window while seated (21). Moreover, windows should be located so that individuals can see out of them from the dining area. Because many elderly persons eat alone, the opportunity to look out of a window may be stimulating and psychologically rewarding (6,14,20,21,23).

b) Social Factors

While the social needs of older people are related to their psychological needs, there are some differences which can be translated into the design of the unit. Like most people, the elderly desire certain amounts of privacy. Units should be designed for low noise transference between units. In addition, they should have separate rooms and storage areas which allow residents to screen from view those areas or items which they do not want visitors to see. Where private spaces are provided, research has found that more social interactions take place within units.

Units should be large enough to facilitate entertaining. The living room should be large enough to allow seating for several people. Moreover, the dining area should be large enough to allow at least four persons to be seated around the table comfortably (21). In these ways, units can facilitate and encourage social interaction and maintain social functioning.

c) Physical Factors

There are two basic areas of physical need which are expressed in the literature on housing for the elderly. The first relates to the need to insure physical safety and reduce accidental injuries. The second is the need for accessibility within the unit.

Units can be designed to minimize the danger of accidents in several ways. Because elderly persons almost uniformly have reduced vision, adequate levels of illumination should be provided, especially in work areas such as the kitchen (32). Because of changes in the eye as a person ages, shadows and glare may reduce visual acuity and cause some older persons to become disoriented and confused (31). Whenever possible, natural and artificial light should be manipulated so as to reduce glare and shadows. Non-reflective materials can also be used to reduce such glares.

Older persons may also experience circulatory or other problems which may cause dizziness or unsteadiness. In addition, their joints often become stiff and their bones brittle. For these reasons, they are quite susceptible to falls which can cause serious injury. Units should be designed to minimize these potentialities.

Flooring materials in both the kitchen and bathroom should be resilient whenever possible. In other rooms, low-level, loop carpeting is strongly advised in order to minimize the impact of a fall. Where carpeting is not used, non-glare and non-slip floor surfaces should be used. Extremely hard surfaces should be avoided.

Falls can also occur when persons must reach above their head or stand on stools or ladders to reach storage areas. It should be kept in mind that older persons are considerably shorter than younger persons and have reduced reach spans. Thus shelves in storage spaces and heating and air conditioning controls should be kept within easy reaching distance of elderly persons (about 5'6"). For the same reasons, wherever light fixtures are provided in a unit, they should be wall-mounted to facilitate light bulb changes.

Other physical attributes of the elderly often make it difficult to reach down near the floor. For this reason, electrical outlets and the like should be placed at table height to facilitate their use.

Units should be designed with a minimum of architectural barriers. Door thresholds should be eliminated to facilitate the use of walkers, wheelchairs, and other aids to mobility. Doors should be wide enough to permit wheelchairs to pass through them. Similarly, the spatial arrangement of circulation areas should permit passage with walkers or wheelchairs. While there are more specific requirements for the design of "handicapped units," all units should be somewhat accessible to allow disabled individuals to visit tenants in other units.

Health data show that a significant portion of elderly individuals are afflicted with chronic arthritis (31). These persons find it difficult to grasp objects such as doorknobs. Other older persons have reduced arm strength or may have tremors or other disorders which make it difficult to grasp objects. Thus doors should be outfitted with door levers rather than knobs. Similarly, drawer pulls and other hardware should be designed so that they can be easily grasped by arthritic hands.

2. Kitchen and Bathrooms.

Two specific spaces, kitchens and bathrooms, create a number of accessibility problems. These rooms are discussed in more detail below.

Kitchens must be well-designed in order to enable functionally impaired persons to continue to use them safely. Many of the general suggestions above apply here. Cabinets and shelves should be placed within easy reach of residents. Under no circumstances should an elderly person of average height be forced to stand on a stool in order to use cabinets.

Counters should be well-lit. One way of providing adequate illumination for persons with potential vision difficulties is to place fluorescent lights under cabinets so that counter tops are well-lit. Some have suggested that counter depths in elderly housing should not be quite as deep as standard counters to minimize the need for extended reaches. The base cabinets should be easily accessible as well. Some suggest that knee space be provided under the sink to allow a person to sit while washing dishes. (21).

The range should have a side-hinged oven door to minimize the need for extended reaches. Moreover, the stove should have burner controls mounted on the front or side of the stove. Controls mounted on the rear of the stove are strongly discouraged.

Refrigerators should have a separate door to the freezer compartment to permit easy access. The refrigerator may be frost free. However, it should be noted that this will result in higher utility costs. If group meals are provided on-site, then refrigerators and/or freezer compartments may be smaller.

All wall surfaces and counter tops should be made of materials which are easily cleaned. This allows persons with diminished physical functions to continue to clean their own kitchens. There are more rigorous specifications for units with kitchens specifically designed for the wheelchair handicapped. These specifications are found in Chapter 55 of the State Building Code (See Appendix III).

Bathrooms also require a number of special design features. They have a high accident potential and often are a source of numerous environmental barriers.

Research implies rather forcefully that bathrooms for use by elderly persons should not be equipped with tubs (1, 19). Bathtubs are the single, largest source of injury in the bathroom, far exceeding all other sources of injury (including shower stalls). They require persons to enter and exit in an unbalanced position, and they

are often slippery. They are made of hard materials which can cause serious injury when struck (1). While there is some controversy over the preferences of elderly persons for tubs versus shower stalls, the injury data clearly indicate that the regular use of tubs be discouraged.

Shower stalls should have few or no barriers near the floor. Moreover they should be large enough to enable a person to move out of the water stream if the water gets too hot. A chair or bench should be included in the shower stall along with a flexible hose and shower head which can be hand-held (1, 19). Grab bars should also be strategically placed in and near the shower stall.

While bathtubs in individual units are discouraged, tubrooms should be provided on each floor or alternate floors for those who may need a tub for therapeutic reasons. The room should be accessible for those with mobility limitations, and grab bars should be placed around the tub.

The toilet is best located in a corner to facilitate the proper placement of grab bars. These bars are essential to assist a person in raising or lowering himself/herself. While building codes require elevated toilets, there is some controversy over the wisdom of this requirement. Blood circulation may be cut off during prolonged sitting, and the elevated height has also been shown to be incompatible with proper human anatomical and physiological functions (19). For this reason, toilets should be made as close to normal height as codes permit. In units designed for the handicapped, this suggestion is less valid, since in many cases an elevated toilet facilitates transfers to and from a wheelchair.

Finally, the bathroom itself should be placed directly across from the bedroom door so that the part of access between the two rooms is direct and unobstructed. Some elderly persons become disoriented at night and find it difficult to get to the bathroom if they must turn a corner or walk down a hallway to get there. The bathroom should be accessible from a hallway, and should be located so that a person can enter the bathroom without walking through the bedroom. The door to the bathroom should swing out so that entry can be made in an emergency. Overall, extremely hard materials such as porcelain and ceramic tiles should be avoided whenever possible in order to minimize the risk of injury.

E. Security

One concern which affects the design of community space, outside space, and the individual unit is security. Older persons have a psychological need to feel safe and secure. They wish to be safe from intrusion by strangers (14, 23, 24). Thus, all buildings should be secured with self-locking entries and exits. Lobbies with sitting areas near the main door reinforce surveillance and security. Similarly, individual unit entries should be secured with high quality locks and hardware.

Any foilage around the entrances to the building and parking areas should be high-branched to prevent the possibility of concealment behind shrubs. Shrubbery should be placed so that residents can "keep an eye" on the parking area, but this should not take precedence over aesthetic concerns. Both areas should be well-lit.

In addition, emergency call systems should be included in the units to both psychologically reassure the resident and to summon emergency personnel in the event of an accident or illness. Many sources recommend that an emergency system be installed in the bathroom and bedroom (11, 14, 21). They should not be located near other light switches to avoid confusion. Newer devices, however, allow emergency equipment to be carried around on the "person" or to be transported from room to room (39). These devices give a greater sense of security and are close at hand in an emergency.

The telephone can be used to augment an emergency call system. When a switchboard is placed in a building, the phone may be effective in summoning help. It can be knocked off the hook or used to summon aid verbally. For this reason, telephone jacks should be placed in every room to allow the phone to be moved. The use of a "buddy" system should also be considered whereby residents would call a particular number everyday to indicate that they are "OK". Failure to call would indicate a problem, and the resident would then be contacted. An "I'm OK" system works similarly. A resident places a card outside his/her apartment each morning if they are all right. If the card is not put out, the resident is contacted.

IV. ACCESS TO SERVICES

Services that are available in or near an elderly housing development are an important part of the supportive environment. They are needed to enhance independent functioning for as long as possible. These services can be provided in two ways: 1) housing may be placed near existing community services in order to facilitate their use by elderly residents; and/or 2) services may be delivered within the building as a part of the housing.

It should be remembered that services are not a substitute for the care and assistance of an older persons family and friends. Sponsors should ensure that housing management encourage the continued involvement of a resident's family and close friends to supply help when needed.

A. Access to Services in the Community

Access to services in the community is very important. Good access to grocery stores, medical services, transportation, and public facilities encourages independent functioning by the residents for as long as possible.

Exactly which services should be located nearby and how close these services should be to the housing site is dependent upon such factors as: 1) the location of the development (urban, suburban, or rural); 2) the quality of the existing community-based services; 3) the stated preferences or needs of the potential residents; and 4) the level of services provided in the building.

1. Transportation.

The availability of dependable transportation encourages mobility and provides access to other services for the elderly (11,12,14,21). In an urban setting, a major public transit route should be within 1 or 2 blocks of the site. In a suburban setting, it is suggested that there be access to some form of transportation service with scheduled rides to specific destinations. (Although on-site transportation services are discussed in a later section, in only a few cases will access to community transportation services compensate for a housing site which is remote from other essential commercial services.)

2. Health Services.

Proximity to a variety of health services is very important in determining the location of elderly housing. Not only should major medical facilities be reasonably close, but health services such as doctors' and dentists' offices, community clinics, etc., should be close enough to encourage residents to receive regular primary health care.

At all housing sites (whether urban, suburban, or rural, and regardless of the level of service provided in the building), major medical facilities should be available within a 20-minute driving radius of the site (23,25, 26). These facilities should be connected to the site by public transit. There should also be ambulance service available to the site.

In urban and suburban areas, housing should be located as close as possible to medical clinics. In rural areas, however, it is not always possible to locate housing near doctors and dentists. In cases where such services are located in other towns, it may be necessary for the manager to arrange transportation to nearby medical services. Housing sites which are extremely isolated from health services are strongly discouraged.

3. Commercial Services and Public Facilities.

Housing for the elderly should be located near a variety of other community services. At a minimum, it is essential that such housing be within walking distance (1 to 5 blocks) of a grocery store and a pharmacy (21,23). Pedestrian access to these commercial facilities should be direct, safe, and unobstructed.

In addition, other community services should be in close proximity to the housing site. These include:

- a) Places of worship
- b) Banks
- c) Post Office
- d) Libraries
- e) Restaurants
- f) Other commercial establishments

While it is not essential that this latter group of services be within walking distance in order for the development to be successful, the closer their proximity the better.

The distances to community services must also be evaluated on several other criteria:

- a) Adequacy of the walkway systems:
 - Are the sidewalks paved, well-lit and maintained?
 - Is snow removal provided?
 - Are there adequate crosswalks at intersections including control devices and extended time to cross the street between lights?
 - Are shopping carts available to assist in carrying packages home?

b) Quality of pedestrian security:

-Is there a safe area where elderly residents can be reasonably free from fear of bodily harm or robbery?

c) Topographic characteristics of the neighborhood:

-Are the slopes of the sidewalks between housing and community services not greater than 5% or no longer than 75 feet?

The proximity of community facilities should also be considered in the selection of an elderly housing site. Such facilities as community or senior centers, libraries, museums, and parks with opportunities for active or passive activities should either be nearby or easily accessible to the housing.

B. Services Provided On-Site

A variety of levels of service can be provided in elderly housing. The level of services a housing sponsor decides to provide in a building will depend upon several factors: 1) the type of elderly population to reside in the building; 2) the availability of other housing or community services in that local area; and 3) the preferences or stated needs of the elderly who will reside in the housing.

Many times the services needed as a part of elderly housing are available through already existing community resources and can be made available through the use of the new housing development as a site for the provision of these services. If this is possible, a housing sponsor can then integrate the development with existing community resources, avoiding costly duplication of services. (See Appendix I for listing of possible community resources.)

1. Levels of Service.

Because of the gradual decline in functional health that occurs, older persons often need supportive services. In most cases, more than one service is needed to compensate for these functional losses. For example, an older person who has severe heart and circulatory problems which limit activity may need a congregate meal service (because he or she is unable to cook for themselves) as well as such services as transportation (because of limitations in energy) or regularly scheduled medical services to monitor their health (21).

Even if some of the services included in these "packages" of services do not appear to be needed initially, it is important to keep in mind that at least some services will be needed at a later time as residents age.

The following classification describes four levels of services which can be provided in housing developments for the elderly (21):

a) Social Activities Only

Housing with this minimum level of services would provide (or arrange for) on-site programming of social activities for the residents. No additional management staff would be required beyond the resident manager.

b) Basic Level of Services

Housing with a basic level of services for its residents would provide (or arrange for) the following services:

- 1) social activity program;
- 2) regularly scheduled medical or nursing services;
- 3) transportation services; and
- 4) social and personal counseling/referral.

c) Moderate Level of Services

Housing with a moderate level of service for its residents would provide (or arrange for) the following services:

- 1) social activity program;
- 2) regularly scheduled medical or nursing services including 24-hour access to emergency services;
- 3) transportation services;
- 4) social and personal counseling/referral services; and
- 5) a group meal service.

If all these services were provided, several professional staff members would be required to implement the services. These staff members would range from nurses to social workers on at least a part-time basis.

d) Maximum Level of Service

Housing with a maximum level of services for the residents would provide (or arrange for) the following services:

- 1) social activity program;

- 2) regularly scheduled medical or nursing service and 24-hour access to emergency medical services and/or a small infirmary;
- 3) transportation services;
- 4) social and personal counseling/referral services;
- 5) meal service to which tenants are required to subscribe for a minimum number of meals, and
- 6) personal care services such as assistance with housekeeping, laundry, or personal grooming.

If those services were provided, a large staff would be required including nurses, housekeepers, social workers, dining room staff, and administrative staff.

This classification system is somewhat ideal. It assumes that a housing development is aimed at a segment of the elderly population with one level of service need, and the appropriate "package" of services can then be provided. While this can be attempted, it is more likely that a building will include residents with a range of service needs. Some residents may only require social activities. Others may need a moderate level of services to live independently. Sponsors must do their best to coordinate the needs of the residents with the resources available for providing services.

2. Discussion of Specific Services

The services that can be provided within housing for the elderly are discussed in more detail below.

a) Activity Programs.

Structured activity programs in housing for the elderly encourages interaction and continued social functioning among the residents. Such programs are often successfully organized by the residents themselves. At times, however, professional supervision may be desired to organize activities which reflect the level of service needed by the persons in that housing. Activities provided in the housing development can be diversified as the residents desire. In many cases, the level of diversity and the degree of specialization will depend upon the size of the development and its ability to provide for staff and activity space.

b) Health Services.

Health services are included in three of the four service levels. All elderly housing should provide assistance to residents in procuring medical services in the community (e.g., providing lists of doctors in the area) (21). The ability to provide on-site health services and the type of services provided will depend upon the size of the housing development, the income levels and needs of its residents, and whether or not it is affiliated with a nursing home or medical facility.

It is possible to arrange for on-site provision of medical services in a variety of ways. Housing which provides basic services should arrange for regularly scheduled visits by a nurse and/or other health personnel from the community. Most housing developments should be able to support this level of service on a weekly or bi-weekly basis. Space should be set aside for the provision of these services although such space may be used for other purposes as well.

Housing which provides a moderate service level may provide a private office for use by a visiting physician or nurse. Such housing should also have an arrangement for 24-hour emergency services if a nurse cannot be supported on-site. Small-scale developments probably will have to make arrangements with community agencies for this service, although medium or large-scale developments should be able to support them. Large scale developments may be able to provide a full-time on-site clinic. Such services would require specialized spaces. In cases where a medical clinic is designed to serve community residents as well as housing residents, separate entrances to the clinic should be provided for use by non-residents (21).

Housing which provides the maximum level of service should provide space for an on-site nurse, clinic, and/or infirmary. In many cases, housing providing this level of service may be affiliated with a nursing home or medical facility which facilitates sharing staff and service space. Some housing may provide special care areas which emphasize provision of medical care in a home-like setting. Only large developments can support these services, however. Whenever more intensive health services are provided on-site, the environment should be kept as "non-institutional" as possible.

c. Transportation Services.

Access to transportation is extremely important for older people. Public transportation which increases the mobility of the more "able" elderly is often provided in urban areas. When a housing development is located reasonably close to public transit routes, there is less need for the housing development to provide additional services itself. In smaller towns or some suburban locations, however, public transit is generally not as available. In these cases, the housing development should either be located within walking distance of essential community services, or it should provide necessary transportation to these services.

These services may be provided in several ways including: 1) purchase of a van or mini-bus; 2) a contract with a private transportation service; 3) development of a well-organized volunteer transportation service through local churches or community groups; or 4) arrangement with current transportation programs to provide service to the housing development. It is essential that transportation service be dependable and suitable for use by all residents.

d) Social and Personal Counseling/Referral Services.

Because older people experience a number of health and social changes, they may require counseling and/or referral services. In some cases, the housing manager may be qualified to provide limited counseling or to make necessary referrals. Experience has shown, however, that in developments where the manager is required to review tenant eligibility, residents are unwilling to seek counseling from the management. When a sponsor can afford it or make the necessary arrangements with community agencies, counselors may be hired or brought into the development on a schedule similar to that used for a visiting nurse. Not all residents will need this type of service on a regular basis, but it is important that the residents know that if the service is needed, it is available.

In all cases, private spaces should be set aside for use by counselors, although the same space may be scheduled for different uses at other times of the week.

e) Meal Service.

The provision of group meals is included in two of the four service levels. Depending upon the need, one or two meals per day can be required, or the service can be offered as desired by the residents. Meal costs are reduced when the dining service is made mandatory, but this system limits the residents' freedom of choice, and residents of subsidized housing may not be able to afford required meals without an additional subsidy (23). In general, only large-scale developments can offer optional meal services because of the overhead costs of constructing and staffing a dining room. However, opening the meal program to residents of the larger community may help alleviate these problems.

Since meal time is an important part of the day, the dining room should provide a comfortable social

atmosphere with pleasing decor. The tables should not be placed in long rows (which appears more institutional), but should be placed to approximate a restaurant arrangement (11). Movable room dividers may be used to divide a large room into smaller, more intimate spaces. Most tables should accommodate four persons while some tables should accommodate from two to six persons. In some instances, the dining room may double as a community room for use at other times of the day.

f) Personal Care Services.

The provision of chore, laundry, or personal care services is included only in the most intensive service level. These services may offer short-term or long-term assistance to handicapped or convalescing elderly persons. There are several ways in which such services can be made available: housekeepers can be hired as part of the janitorial staff to assist the residents in cleaning their units on a regular basis; residents can be referred to community resources if this need is expressed; or the services could be provided on a "request only" basis by existing staff. Again, the scale of the development will determine the level of service which can be offered and how the services will be provided.

3. Financing Services.

Presently, there is no easy way to "package" and finance services for the elderly in housing developments. When residents are forced to pay for a service "package" in addition to their rents, many find the costs prohibitive. When residents are given the option of purchasing additional services at a fairly low cost, many residents forego needed services in order to conserve their limited resources. In addition, most of the federal subsidy programs which finance housing for the elderly do not provide subsidies for the operation of services or the increased management costs. While the "Section 8 - New Construction" program is authorized to finance special-use areas, it has not been as flexible as Section 202. (See Appendix II on sources of financing for elderly housing.)

Given these program limitations, a sponsor must look elsewhere for additional funding for service provision. Several approaches can be taken:

a) Bring On-going, Community Based Services Into the Housing.

Sponsors should encourage community agencies to use the housing development as a site for the provision of their services. When possible, written contracts or agreements should be used. Residents must also be made aware of the fact that these are community services rather than services exclusively for residents.

b) Develop Volunteer Services.

Sponsors should work closely with all community organizations serving the elderly in developing and providing "non-professional" services such as transportation or recreational activities for residents of their housing developments.

c) Funding from Federal Service Programs for the Elderly.

Funding for the development or expansion of community services for the elderly is available under Title III of the Older Americans Act. Title VII of the Older Americans Act provides funding for congregate dining programs for older persons. In addition, some tenants may be eligible for services under Title XX of the Social Security Act which is administered by county welfare departments.

Thus, while outside funding for services is limited, some resources do exist and should be tapped whenever possible.

V. CONCLUSION

The preceding material has been presented in an attempt to aid potential sponsors and developers of housing in their thinking about appropriate service, design, and environmental considerations for elderly housing. Each development faces unique situations which call for unique solutions. The appropriateness of a given solution should be determined by considering the special needs of the elderly population. If developers, designers, and sponsors thoroughly understand the needs and characteristics of the elderly, the quality of life for many elderly housing residents no doubt will be improved.

1. ABT Associates, A Systematic Program to Reduce the Incidence and Severity of Bathtub and Shower Area Injuries (a) Final Report; (b) Executive Summary, (Washington, D.C., National Technical Information Service, U.S. Department of Commerce, 1975).

A rather technical study of the situations and circumstances which give rise to accidents. Finds that bathtubs can exceed showers in accident potential. Also finds that the severity of injuries suffered by the elderly is greater than that experienced by other age groups.

2. Atchley, Robert and Thomas O. Byerts, eds., Rural Environments and Aging, (Washington, D.C., The Gerontological Society, 1975).

Proceedings from a conference on aging in rural areas, the publication examines the demographics, culture, lifestyle, family relationships, housing and community services in rural areas.

3. American Society of Landscape Architects Foundation, Barrier Free Site Design, (Washington, D.C., U.S. Department of Housing and Urban Development, Office of Policy Development and Research, April, 1976).

An illustrated design manual which aims at eliminating architectural barriers. Examines laws, cost/benefit ratios, human and design considerations.

4. Carp, Frances M., "A Senior Center in Public Housing for the Elderly", The Gerontologist, 16:3 (1976).

5. ———, "Long-Range Satisfaction with Housing", The Gerontologist, 15:1 (1975) pp 68-72.

Compares pre-and post-move attitudes of residents of Victoria Plaza against the attitudes and non-movers. After 8 years the data show the satisfaction with new housing exceeds that for non-movers.

6. ———, "User Evaluation of Housing for the Elderly", The Gerontologist, 16:2 (1976) pp 102-111.

Assesses residents satisfaction in Victoria Plaza after 8 years of occupancy. Finds that primary determinents of satisfaction are good qualities of the physical environment. Also pointed out the inconvenience of certain design features included to facilitate living for the elderly.

7. Comptroller General of the United States, Report to the Congress, Housing for the Elderly--Factors Which Should be Evaluated before Deciding on Low-or High-Rise Construction, (Washington, D.C., General Accounting Office, 1975).

Points out need to closely weigh cost factors before building. No firm conclusions are drawn although the tone of the report appears negatively directed at high-rise buildings for the elderly.

8. Eisdorfer, Carl, et. al., Housing and Environment Project 1971-1975 Final Report to the Administration on Aging, (Washington, D.C., The Gerontological Society, 1976).

Summarizes accomplishments of a five-year study of housing and environments.

9. _____, Housing and Environment Project Final Report, Residential Environments for the Functionally Disabled, (Washington, D.C., The Gerontological Society).

Examines the concept of "barrier free" design. Identifies populations affected including elderly, mentally retarded, and physically disabled groups.

10. Ethel Percy Andrus Gerontology Center, Housing for the Elderly, (Los Angeles, University of Southern California, 1973).

A compilation of essays on housing for the elderly including chapters on design concepts and issues by noted gerontologist and housing planners.

11. Fedewa, Bernard, William Jackson, and Howard L. Deardorff, Housing for the Elderly Development Process, (Lansing, Michigan State Housing Development Authority, 1974).

A comprehensive guide to the development and design of housing for the elderly. Stresses the process components as well as design, Includes a chapter on technical standards. An excellent resource.

12. Gerontological Society, Community Planning for the Elderly, (Washington, D.C., Distributed by: National Technical Information Service, U.S. Department of Commerce, 1974).

Stresses site selection and service needs of the elderly and their housing.

13. Fehrenbacher, Margot Beth, "Residents' Likes and Dislikes Relating to Physical Characteristics of Selected Public Housing Designed for the Elderly in St. Paul", Unpublished Thesis, (University of Minnesota, February, 1973).

14. Gelwicks, Louis and Robert Newcomer, Planning Housing Environments for the Elderly, (Washington, D.C., National Council on the Aging, 1974).

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15. Ginther, Delores Ann, "Selected Physical Features in Apartments for the Elderly and How They Encourage Social Interaction", Unpublished Thesis, (University of Minnesota, September, 1973).

16. Goldsmith, Selwyn, Designing for the Disabled, Second Edition, (New York, McGraw-Hill Book Company, 1967).

An architectural reference manual based on British design standards. Most of the illustrations are not useful in the United States. However, the first chapter is very useful in developing a way of thinking about the needs of the disabled.

17. Hartman, Chester, Jerry Horovitz and Robert Herman, "Designing with the Elderly", The Gerontologist, 16:4 (1976) pp 303-311.

Examines ways of involving elderly persons in the design phase of housing. Includes discussion of media presentations and a user-needs survey.

18. Howell, Sandra, et. al., Shared Spaces in Housing for the Elderly, (Cambridge, MA., Massachussetts Institute of Technology, 1976).

A test document which examines the use of shared spaces in housing for the elderly. It sets forth methodological issues, reports on several case studies, and defines guidelines pertaining to the use and location of shared spaces.

19. Kira, Alexander, The Bathroom, Revised Edition, (New York, The Viking Press, 1976).

The most comprehensive study of the bathroom available. Examines the psychological, social, physiological and anatomical aspects of activities carried out in the bathroom. There is a helpful chapter on the needs of the elderly and disabled.

20. Lawton, M. Powell, "Planner's Notebook: Planning Environments for Older People", American Institute of Planners Journal, March, 1970, pp 124-129.

Applies environmental concepts to housing and design. Looks at the individual, the physical environment, the personal environment, the supra personal environment, and the social environment.

21. _____, Planning and Managing Housing for the Elderly (New York, John Wiley and Sons, 1975).

Discusses the planning and management of housing for the elderly. Stresses general design elements and their relationship to the needs of elderly residents. An excellent resource.

22. _____, "The Relative Impact on Congregate and Traditional Housing on Elderly Tenants", The Gerontologist, 16:3 (1976).
23. _____, Robert Newcomer, and Thomas O. Byerts, Community Planning for an Aging Society, (Stroudsburg, PA., Dowden, Hutchinson and Ross, Inc., 1976).

Examines the aged population in a community setting; the policy decisions which affect old people; the programmatic aspects of housing for the elderly and necessary community services.

24. McGuire, Marie C., Design of Housing for the Elderly: A Checklist, (Washington, D.C., National Association of Housing and Redevelopment Officials, 1972).

A concise but useful checklist and narrative outlining desirable design aspects of various spaces within housing developments for the elderly. Nice and short.

25. Metropolitan Council of the Twin Cities, Housing Guide of the Metropolitan Council: Introduction, Overview, Goals and Objectives, (St. Paul, 1977).

26. _____, Housing Review Manual, (St. Paul, 1975).

27. Minnesota Housing Finance Agency, Housing Alternatives for the Elderly: Background and Issues, (St. Paul, 1976).

A planning document which profiles the elderly in Minnesota and examines their current housing options. The discussion focuses on development of a range of housing alternatives suited to the varied needs of elderly subgroups. Available from Minnesota Housing Finance Agency, St. Paul.

28. National Center for Health Statistics, Series 10, No. 84, "Prevalence of Selected Chronic Respiratory Conditions, United States, 1970", Vital and Health Statistics, (Washington, D.C., U.S. Department of Health, Education and Welfare, (1970).

29. _____, Series 10, No. 87, "Impairments Due to Injury, United States, 1971", Vital and Health Statistics, (Washington, D.C., U.S. Department of Health, Education and Welfare, 1971).

30. _____, Series 10, No. 94, "Prevalence of Chronic Circulatory Conditions, United States, 1972", Vital and Health Statistics, (Washington, D.C., U.S. Department of Health, Education and Welfare, 1972).

31. _____, Series 10, No. 112, "Health Characteristics of Persons with Chronic Activity Limitations, United States, 1974", Vital and Health Statistics, (Washington, D.C., U.S. Department of Health, Education and Welfare, 1974).

32. _____, Series 11, No. 30, "Monocular-Binocular Visual Acuity of Adults, United States, 1960-1962", Vital and Health Statistics, (Washington, D.C., U.S. Department of Health, Education and Welfare, 1962).
33. Newman, "Housing Adjustments of the Disabled Elderly", The Gerontologist, 16:4 (1976).
34. Office of the Secretary, Department of Health, Education and Welfare, Technical Handbook for Facilities Engineering and Construction Manual, Part 4--Facilities Design and Construction, (Washington, D.C., Department of Health Education and Welfare, January, 1975).
- A technical manual (chapter) containing a design checklist along with a concise discussion of handicapped design considerations.
35. Pastalan, Leon, and Daniel H. Carson, Spatial Behavior of Older People, (Ann Arbor, The University of Michigan Press, 1970).
- Examines several environmental and psychological constraints which influence the behavior of the aged. These include: territoriality, small group ecology, home range and use of space, elderly adaptability and other topics. The book is helpful in relating the psychological discipline to the environment.
36. Schumacher, Thomas L., et. al., The Built Environment for the Elderly, A Planning and Design Study, Focusing on Independent Living for Elderly Tenants, (Princeton, N.J., Princeton University, 1975).
- Makes a number of detailed and specific design recommendations pertaining to buildings, sites, units and common spaces. Guided by social science literature.
37. Sears, "Elderly Housing: A Need Determination Technique", The Gerontologist, 14:2 (1974).
38. Sherman, Susan R., "Provision of On-Site Services in Retirement Housing", Aging and Human Development, 6:3 (1975).
39. Smith, E. and E. J. Schimandle, A Study of Emergency Response System for Housing for the Aged, (Washington, D.C., Distributed by National Technical Information Service, U.S. Department of Commerce, 1973).

Presents results of HUD sponsored evaluation of an emergency response system (both hardware and staff) is a case study which has applications in a wide variety of settings.

40. Thomas, Stanley B., Report to the President and to the Congress on the Housing Needs of Handicapped Individuals, (Washington, D.C., Architectural and Transportation Barriers Compliance Board, 1976).

Transcript of hearings related to the housing needs of the handicapped. Also summarizes legislation.

41. Weiss, Joseph D., Better Buildings for the Aged, (New York, Hopkinson and Blake, 1969).

Written by an architect, the book photographically illustrates aspects of "good design" in both housing and nursing facilities. A good discussion of the housing needs of the aged is also included. Rather dated in some parts.

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[Housing Alternatives for the Elderly,
Appendices]

APPENDIX I

COMMUNITY RESOURCES FOR PROVIDING SERVICES TO THE ELDERLY IN HOUSING DEVELOPMENTS

There are a number of resources available in the community that could be used to provide services to older persons living in housing developments. Listed below (by service) are the major resources that could be utilized to provide services in these developments:

<u>Service</u>	<u>Resources</u>
Social/Recreational Activities	City Recreation Departments Community/Senior Centers Churches/Civic Groups Elderly Group Organizations
Transportation	Local Transit Authorities Private, non-profit Social Service Agencies Volunteer and Civic Organizations Special Discount/Rate Arrangements with Local Taxicab/Bus Companies
Social and Personal Counseling/Referral	Local Welfare Departments Community/Senior Centers Local Mental Health Centers Private, non-profit Counseling Agencies Churches (counseling by clergy)
Congregate Meal Service	Professional Catering Organizations Title VII Nutrition Program for the Elderly
Regular Medical/Nursing Services	Local Public Health Agencies Local Hospitals/Nursing Homes Volunteer Physicians/Nurses
Personal Care	Local Public Health Nursing Agencies Local Welfare Departments Local Hospitals/Nursing Homes Local Home Care Organizations

APPENDIX II

Elderly Housing Programs

The major public programs for financing elderly housing developments within the state are described below.

I. HUD* Programs

A. Section 231 Mortgage Insurance Program

This program provides FHA insurance for mortgages made by private lenders. The program is for multi-family developments which are designed specifically for the elderly and have market rate rents. Both non-profit and profit oriented developers are eligible. Applications are accepted throughout the year.

B. Section 221d-3, d-4 Mortgage Insurance Programs

Both of these programs provide FHA insurance for mortgages made by private lenders. The primary difference is the 221d-3 program is limited to non-profit or limited dividend sponsors, while the 221d-4 program is for profit-oriented developers. Both programs produce market rate rents, although Section 8 subsidies may be used, in which case low and moderate income elderly may occupy the building. Applications are accepted throughout the year.

C. 213 Mortgage Insurance Program

The program provides FHA insurance for mortgages made by private lenders for cooperative housing developments. Both non-profit and profit oriented developers are eligible, although for profit developers sell the development to a cooperative owner. This program is quite flexible in terms of kinds of services and amenities which can be developed. The income level served can vary greatly and is dependent upon service levels provided. Applications are accepted throughout the year.

D. Section 202 Direct Loan Program

The program provides direct loans for construction and permanent financing of elderly multi-family developments. The specific interest rate is below market rate and fluctuates with the Federal bond rate. Private, non-profit corporations may apply for the loans. The loan funds are available on a sporadic basis and funded directly through the Washington HUD office. A total of 100% of the units in a Section 202 development must have an available Section 8 subsidy.

Invitations for applications are published in the Federal Register. The application period is quite short (usually by 60 days) and potential sponsors should have preliminary plans for a development prepared beforehand.

E. Section 8 Housing Assistance Payments Program for Lower Income Families

This program is the major subsidized housing program presently available for the elderly. The program provides a Housing Assistance payment to participating property owners which is the difference between the fair market rent the owner would normally receive for the rental unit and 15-25% of the person's income. There are income and fair market rent limits set by the Area HUD office, and both low and moderate income elderly may be served.

The Section 8 Existing Housing Program is administered by HRA's which issue certificates to income-eligible elderly. People receiving certificates may look for a rental unit or remain in their current unit if the rents are within HUD established limits.

In the Section 8 New Construction Program the developer of a new or substantially rehabilitated rental unit applies for the Housing Assistance Payments. These payments are again used to make up the difference between 15-25% of the tenants rent and the fair market rent of a unit. Allowable rents are higher for newly constructed or rehabilitated units, than existing units. Both non-profit and profit-oriented developers are eligible. Developers apply for the percentage of Section 8 units they want in the building, although most units developed for the elderly carry subsidies.

Developers may obtain financing from a number of different sources.

1. Conventional lender either uninsured or utilizing private mortgage insurance or HUD-FHA insurance processed concurrently with the Section 8 application.
2. HUD as a direct lender (e.g., such as under the Section 202 elderly program).
3. The Farmers Home Administration as a direct lender under the Section 515 multi-family program.
4. Privately sold revenue bonds.
5. The Minnesota Housing Finance Agency (MHFA).

HUD announces the allocation for the Section 8 Program near the beginning of each fiscal year in the fall. Funds for new construction are divided between HUD and MHFA. An invitation for applications is usually published shortly after allocations are announced.

Sporadically supplemental or bonus funds are available throughout the year from HUD, MHFA or the Metro Housing and Redevelopment Authority (located within the Metropolitan Council). Invitations are then published in local papers for preliminary proposals.

Developers submit their preliminary proposals to HUD and Metro HRA at the time of application. MHFA accepts preliminary proposals at any time, but does not review them until an allocation of Section 8 funds is received from HUD. MHFA can provide both construction and permanent financing at below market interest rates. Developers need not make a separate application to HUD.

Developers should contact HUD at 725-4747 for further information on the agency's program. For further information on MHFA programs call 296-7618.

II. Farmers Home Administration (FmHA)

Through the Section 515 program FmHA makes direct loans to finance rental housing for moderate income elderly and families. This program can operate in all communities of less than 10,000 population and some communities between 10,000 and 20,000 population. Portions of Washington, Dakota, Scott, Carver and Anoka Counties are eligible for FmHA programs. Loans are only provided if developers are unable to finance the construction and/or mortgage loan through commercial lenders on conditions and terms which would permit them to rent units to eligible families. Sponsors can be profit-oriented developers, who pay the regular interest rate (9.5%), or limited profit and non-profit sponsors who are eligible for interest credit assistance.

Loans can be used to provide recreation and service facilities for the elderly.

Section 8 subsidies can be used with the Section 515 program and are requested through FmHA. The FmHA also administers its own rent supplement program.

Further information can be obtained by calling the State Office at 725-5842.

APPENDIX III

c
A COMPARISON OF CODES AND STANDARDS
AFFECTING CONSTRUCTION OF HOUSING
FOR THE ELDERLY

STANDARDS

- 1 -

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ISSUES

LOCATION OF HOUSING WITHIN THE
COMMUNITY

SITE TOPOGRAPHY AND CHARACTERISTICS

SITE PLAN -- PARKING, DENSITY,
BUILDING HEIGHT, BUILDING LOCATION,
RECREATION FACILITIES REQUIRED,
LANDSCAPING, OPEN SPACE, ETC.

306-2.2. Buildings required to be
accessible to the handicapped shall
have at least 5 percent of the
parking spaces (with a minimum of
2) arranged for wheelchair users..

4.3. Parking Lots.

4.3.1. Spaces that are accessible
and approximate to the facility
should be set aside and identified
for use by individuals with physical

UBC 5502 (e). Automobile parking
areas. Where parking spaces are
provided, at least one space per 50
spaces, or fraction thereof, shall be
provided for the use of the handi-

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SITE PLAN -- (cont.)

306-7. Walking Distance. Maximum walking distance from a parking space to a public entrance of apartment building served: Elderly resident -- 150 feet.

310-4. Maximum slope on a sidewalk for use by elderly tenants -- 5 percent.

401-6.2. Same as 306.2.2. above.

disabilities.

4.3.2. A parking space open on one side, allowing room for individuals in wheelchairs or individuals on braces and crutches to get in and out of an automobile onto a level surface, suitable for wheeling and walking, is adequate.

4.3.3. Parking spaces for individuals with physical disabilities when placed between two conventional diagonal or head-on parking spaces should be 12 feet wide.

4.3.4. Care in planning should be exercised so that individuals in wheelchairs and individuals using braces and crutches are not compelled to wheel or walk behind parked cars.

4.3.5. Consideration should be given the distribution of spaces for use by the disabled in accordance with the frequency and persistency of parking needs.

4.3.6. Walks should be in conformity with 4.2.

capped, and shall be identified for such use. Such parking spaces shall not be less than 12 feet in width, and located as near as practicable to the building entrance specified in UBC 5502 (c) (ed. note: the handicapped entrance).

Drawings 55-1, 55-2 and 55-3. (See end of paper).

SITE PLAN -- WALKS, RAMPS, GRADIENTS,
SITE LIGHTING, BUILDING ENTRANCE
LOCATION, PROTECTION OF ENTRANCE
FROM WEATHER, ETC. MATERIALS
INVOLVED IN ABOVE

205-4.3. Building Access. A primary entrance readily accessible to the physically handicapped, in accordance with provisions of ANSI A117.1 shall be provided to any residential structure intended

4.1. Grading. The grading of the ground, even contrary to existing topography, so that it attains a level with a normal entrance will make a facility accessible to individuals with physical disabilities.

UBC 5502 (b). Site Approaches. Access to building entrances shall be by walks. Such walks shall be of concrete, asphaltic paving or similar permanent material, with a slip-resistant surface, and shall

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SITE PLAN -- (cont.)

for occupancy by the elderly or physically handicapped, all elevator residential structures, any residential structures containing 25 or more housing units, non-dwelling structure appurtenant to and located in such residential structures.

307-3.5. A building required to be accessible to the physically handicapped shall have an entrance walk in accordance with ANSI A117.1 extending from a primary entrance to another acceptable paved way or to vehicular unloading zone.

307-4.6. In housing for the elderly, handrails shall be provided in accordance with ANSI A117.1 on both sides of a tenant stairway with a flight rise exceeding 24 inches and a width exceeding 4 feet and on one side when the width is less than 4 feet.

402-2.3. In housing for the elderly, a foyer or vestibule shall be provided at all living unit entrances opening directly to the exterior where customary in cold climates.

402-7. Ramps. Ramps for entrance and egress in buildings accessible to the physically handicapped shall be designed in accordance with ANSI A117.1.

4.2. Walks.

4.2.1. Public walks should be at least 48 inches wide and should have a gradient not greater than 5 percent.

4.2.2. Such walks shall be of a continuing common surface, not interrupted by steps or abrupt changes in level.

4.2.3. Whenever walks cross other walks, driveways or parking lots they should blend to a common level.

4.2.4. A walk shall have a level platform at the top which is at least 5 feet by 5 feet, if a door swings out onto the platform or toward the walk. This platform shall extend at least 1 foot beyond each side of the doorway.

4.2.5. A walk shall have a level platform at least 3 feet deep and 5 feet wide if the door does not swing onto the platform or toward the walk. This platform shall extend at least 1 foot beyond each side of the doorway.

5.2. Entrances.

5.2.1. At least one primary entrance to each building shall be usable by individuals in wheelchairs.

Note: Because entrances also serve as exits, some being particularly important in case of an emergency, and because the proximity of such exits to all parts of buildings and facilities, in accordance with their design and function, is

not be less than 48 inches wide and a slope not to exceed one vertical to 20 horizontal.

UBC 5502 (c). Building Entrances. At least one required exit of the building shall be accessible for use as ingress for the handicapped, and shall be identified for such use. Such building entrance shall be at the main lobby or corridor, or shall be accessible thereto by ramp or elevator.

UBC 5502 (f). Doors and Doorways.

1. Doorways or doors in the open position shall have a clear opening width of not less than 31 inches.

2. Doors shall be operable by a single effort with one hand.

3. In doorways consisting of two leaves, at least one door shall comply with this section.

4. Where access is through a vestibule, foyer or lobby space, the space separating the doorways shall not be less than 7 feet.

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SITE PLAN -- (cont.)

essential, it is preferable that all or most entrances (exits) should be accessible to and usable by individuals in wheelchairs and individuals with other forms of physical disability.

5.2.2. At least one entrance usable by individuals in wheelchairs shall be on a level that would make the elevators accessible.

BUILDING LOCATION ON SITE -- SUN,
WIND, LIGHT, AIR, VIEW, SHADOW, ETC.
BUILDING'S SYSTEMS

611-4. Public Telephones. If public telephones are installed in buildings required to be accessible to the physically handicapped, at least one in each building shall be provided in accordance with ANSI A117.1.

614-2.3. Minimum elevator sizes.

a. Residential service

Inside car size--see ANSI A117.1

Door size--3'-0" wide by 7'-0" high

Door type--single slide

Capacity--2000 lbs.

b. Service

Inside car size--6'-8" wide by 4'-3" deep

Door size--3'-6" wide by 7'-0" high

Door type--single slide

Capacity--2500 lbs.

5.7. Water Fountains.

An appropriate number of water fountains or other water dispensing means shall be accessible to, and usable by the physically disabled.

5.7.1. Water fountains or coolers shall have up-front spouts and controls.

5.7.2. Water fountains or coolers shall be hand-operated or hand and foot operated.

5.8. Public Telephones

An appropriate number of public telephones should be made accessible to, and usable by, the physically disabled.

5.8.1. Such telephones should be placed so that the dial and the handset can be reached by individuals in wheelchairs.

5.8.2. An appropriate number of

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BUILDING LOCATION ON SITE -- (cont.)

615-3.1. Heating. For housing for the elderly, inside design temperature shall not be less than 75° F in all habitable rooms and corridors when the outside temperature is at design level. Lower inside design temperature may be used for storage rooms, work rooms, and similar spaces.

615-3.3. Hot water and steam systems. Heating systems for housing for the elderly serving 10 or more living units shall be supplied by not less than two properly cross connected boilers. The minimum net capacity of each boiler shall be 70 percent of the total connected load when two boilers are used and 35 percent when three boilers are used. When four or more boilers are used, each shall have the same net capacity, the total of which shall be not less than the total connected load.

615-5.2. If drinking fountains are installed in buildings required to be accessible to the physically handicapped, at least one fountain shall be installed in accordance with ANSI A117.1.

615-7.6. Oxygen systems. When an oxygen system is to be installed in housing for the elderly, the installation of oxygen piping, outlets, manifolds and storage rooms shall comply with NFPA 56, 565 and 566.

public telephones should be equipped for those with hearing disabilities and so identified with instructions for use.

5.9. Elevators.

In a multiple-story building, elevators are essential to the successful functioning of physically disabled individuals. They shall conform to the following requirements:

5.9.1. Elevators shall be accessible to, the usable by, the physically handicapped on the level that they use to enter the building, at all levels normally used by the general public.

5.9.2. Elevators shall allow for traffic by wheelchairs.

5.12. Warning Signals.

5.12.1. Audible warning signals shall be accompanied by simultaneous visual signals for the benefit of those with hearing disabilities.

5.12.2. Visual signals shall be accompanied by simultaneous audible signals for the benefit of the blind.

5.13. Hazards.

Every effort shall be exercised to obviate hazards to individuals with physical disabilities.

5.13.1. Access panels or manholes extremely hazardous, particularly when in use, and should be avoided.

5.13.2. When manholes or access panels are open and in use, or when

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BUILDING LOCATION ON SITE -- (cont.)

an open excavation exists on a site, particularly when it is approximate to normal pedestrian traffic, barricades shall be placed on all open sides, at least 8 feet from the hazard, and warning devices shall be installed in accord with 5.12.2.

5.13.3. Low-hanging door closers that remain within the opening of a doorway when the door is open, or that protrude hazardously into regular corridors or traffic ways when the door is closed, shall be avoided.

5.13.4. Low hanging signs, ceiling light, and similar objects or signs and fixtures that protrude into regular corridors or traffic ways shall be avoided. A minimum height of 7 feet measured from the floor, is recommended.

5.13.5. Lighting on ramps shall be in accord with American Standard A9.1-1953.

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COMMUNITY SPACE REQUIRED, PLANNING
OF SPACE

307-5. Covered walks. Common facilities in housing for the elderly, such as central dining rooms or community halls, which are located in buildings separated from living units, shall have covered walks connecting these functions, enclosed where necessary to assure safe and comfortable use.

401-2.1. Community social rooms. Community social and recreational rooms shall be designed in accordance with the needs of the occupants and shall have adjacent toilet facilities for men and women. An adjacent storage area shall be provided. Such spaces are required in housing for the elderly. Community rooms and public toilets located in buildings required to be accessible to the physically handicapped shall be designed in accordance with ANSI A117.1.

401-1. Space planning. In projects designed both for elderly and for families with children, living units for the elderly shall be located in separate structures, floors or wings of the building and any indoor and outdoor community facilities shall be separated.

401-2.6. Optional Project Facilities. Where the following facilities are provided, they shall comply with the following:
a. Occupational or Physical Therapy--provide space for services

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COMMUNITY SPACE REQUIRED, PLANNING
OF SPACE -- (cont.)

and for storage of equipment.

b. Dietician's Office--when a dietician is to be employed, provide suitable office space convenient to the kitchen.

c. First Aid or Health Room--these facilities and any accompanying infirmary shall be designed for observation, minor treatment, or short term care of project residents. When these services are provided, facilities for attending nurse are required.

d. Nursing Facilities--designed for either short-term or long-term care of project residents shall be as follows:

(1) Facilities may be provided initially within the project or by residential units specially designed for conversion to nursing facilities at a later date.

(2) Facilities shall be grouped in a separate wing, floor or auxiliary building.

(3) The nursing unit and patient rooms shall comply with the requirements of the Minimum Property Standards for Care Type Housing.

(4) The nursing portion of the project shall be clearly incidental to the purpose of providing housing and the ratio of nursing beds to living units shall not exceed 1 to 4.

e. Medical Facilities--where a project doctor's office with examination and treatment rooms are provided, it shall be designed to serve only project residents.

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COMMUNITY SPACE REQUIRED, PLANNING
OF SPACE -- (cont.)

Spaces provided for rental to doctors, dentists, oculists, opticians, etc., shall be within the limits of allowable commercial space and located so as not to interfere with the residential space.

f. Central Dining--space is required to provide meals for the occupants of living units which do not contain cooking and dining facilities. Seating and circulation space for the number of persons to be served at one time shall be provided on the basis of the following table and chair sizes:

Table for four persons: 2'-6" by 3'-2" or 3'-0" by 3'-0"

Table for six persons: 3'-4" by 4'-0" or 4'-0" round

Dining chairs: 1'-6" by 1'-6"
wheelchairs: 2'-1" by 3'-6"

g. Central Kitchen Facilities--are required where central dining is provided. The kitchen shall be arranged and equipped for adequate and efficient food storage, preparation in proper sequence, serving, dish and utensil cleaning and storage, and refuse removal and storage. Except in small installations (under 20 living units), the dishwashing activity shall be separated from that of food preparation. All cabinets and equipment provided shall be designed and installed to prevent contamination by insects, rodents, other vermin, splash, dust, and overhead leakage.

h. Central Bathing Facilities--shall be located on the same floor and in close proximity to the living

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COMMUNITY SPACE REQUIRED, PLANNING
OF SPACE -- (cont.)

units served, i.e., those without
bathing facilities. When provided,
a central bathroom shall contain:

(1) A tub or shower for each 15
persons or less to be served by
the facility.

(2) Space for dressing and
space for movement of wheelchairs.

(3) Adequate lavatories and
compartmented water closets.
Enclosure of water closets is not
required when the water closet is
within a room used only by one
bather. Conditions where a bather
must enter the public corridor to
reach a water closet are not
acceptable.

(4) At least one lavatory and
one water closet suitable for
wheelchair users shall be provided
in accordance with ANSI A117.1.

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PLANNING OF ANCILLARY SPACE --
AMOUNT, MAXIMUM HALLWAY LENGTHS,
WIDTHS, STAIRS, ETC.

402-4.2. Minimum clear widths of
halls and corridors:
Housing for the elderly: 5'-0"

402-6.2. Stairways. In buildings
required to be accessible to the
physically handicapped, the maximum
riser is 7½ inches. Open risers
shall not be used.

402-7. Ramps. Ramps for tenant use
in buildings required to be access-
ible to the physically handicapped
shall be designed in accordance with
ANSI A117.1.

402-8.4. Handrails at stairs. In
buildings required to be accessible
to the physically handicapped, public
stairs shall have handrails in
accordance with ANSI A117.1.

5.1. Ramps with Gradients.

Where ramps with gradients are
necessary or desired, they shall
conform to the following specifica-
tions:

5.1.1. A ramp shall not have a
slope greater than 1 foot rise
in 12 feet, or 8.33 percent, or
4 degrees 50 minutes.

5.1.2. A ramp shall have hand-
rails on at least one side and
preferably two sides, that measured
from the surface of the ramp, that
are smooth, that extend 1 foot beyond
the top and bottom of the ramp, and
that otherwise conform with ANSI
Standard A12-1932. Note:
Where codes specify handrails to be
of heights other than 32 inches, it
is recommended that two sets of
handrails be installed to serve all

UBC 5502 (d). Access to Other
Stories. Access for the handi-
capped to other stories or levels
of the building used by the general
public and/or employees shall be by
elevator or ramp, except the
following:

1. Group H Occupants (apartment
houses) not exceeding 3 stories.
2. Other Occupancies not exceed-
ing 2 stories, where the total
occupant load is less than 100 for
all floors other than the main floor.
Such ramp shall have a slip-
resistant surface. It shall have
a slope not to exceed 1 foot vertical
to 12 feet horizontal and a landing
at the top and bottom, and where the
rise exceeds 3 feet vertically, it
shall have intermediate landings
located not to exceed 2 feet, 6

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PLANNING OF ANCILLARY SPACE --
(cont.)

402-8.7. In housing for the elderly, handrails complying with ANSI A117.1 shall be provided on at least one side of all tenant corridors (except within living units).

402-9.3. Elevator service required. Elevator service shall be provided in buildings of:

Three or more stories in housing for the elderly;

Two story housing for the elderly where central dining facilities are located on a floor level other than the floor level of living units which do not have cooking and dining facilities;

Two or more stories in housing with living units above the first floor intended for occupancy by wheelchair users;
At least one of the required elevators shall be large enough to accommodate a wheelchair in accordance with ANSI A117.1. In housing for the elderly, at least one elevator car in each building shall be of the 2500 lb. service type suitable for handling ambulance stretchers.

402-9.5. Handrails. Tenant elevator cars shall be provided with a handrail in accordance with ANSI A117.1.

405-6.3. Except from a living unit, a single exit is not acceptable in housing for the elderly.

people.

5.1.3. A ramp shall have a surface that is non-slip.

5.1.4. A ramp shall have a level platform at least 5 feet deep and 5 feet wide, if a door swings out on to the platform or toward the ramp. This platform shall extend at least 1 foot beyond each side of the doorway.

5.1.5. A ramp shall have a level platform at least 3 feet deep and 5 feet wide, if the door does not swing onto the platform or toward the ramp. This platform shall extend at least 1 foot beyond each side of the doorway.

5.1.6. Each ramp shall have at least 6 feet of straight clearance at the bottom.

5.1.7. Ramps shall have level platforms at 30 foot intervals for purposes of rest and safety and shall have level platforms wherever they turn.

5.11. Identification.

Identification of specific facilities within a building used by the public is particularly essential.

5.11.1. Raised letters or numbers shall be used to identify rooms or offices.

5.11.2. Such identification should be placed on the wall, to the right or left of the door, at a height between 4 feet 6 inches and 5 feet 6 inches, measured from the floor, and preferably at 5 feet.

inches vertically. Bottom landings shall have a minimum dimension of 6 feet, and top and intermediate landings shall have a minimum dimension of 5 feet. Handrails and guardrails shall be provided as required for stairs.

UBC 5502 (f). Doors and Doorways.

5. The floor or landing at doorways shall be level with or not more than $\frac{1}{2}$ inch lower than the threshold. Where door swings over landing, such landing shall extend not less than 1 foot beyond the door on the latch side.

6. In dwelling units specified in UBC 5503 (a)1, entrances specified in UBC 5502 (c) and toilet rooms or compartments specified in UBC 5503 (c)1, door opening latch hardware shall have lever handles and shall be not more than 3 feet, 6 inches above the floor.

7. Doors serving toilet rooms or stalls shall be capable of being unlocked from either side.

UBC 5502 (g). Stair Tread Nosing.

Risers shall be slanted to meet the tread nosing edge, or where the treads extend beyond vertical risers, nosing shall be rounded and not projected beyond the risers more than one inch.

UBC 5507. Identification.

a) Where required. Spaces normally used by the general public shall have tactile identification, such as raised or recessed letters, labels,

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PLANNING OF ANCILLARY SPACE --
(cont.)

405-6.6. Exit Sign and Emergency Lighting. All housing for the elderly or handicapped shall have emergency exit lighting for every public space, corridor, stairway elevator and other means of egress. Minimum of one foot-candle measured at the floor shall be provided.

5.11.3. Doors that are not intended for normal use, and that might prove dangerous if a blind person were to exit or enter by them, should be made quickly identifiable to the touch by knurling the door handle or knob.

or plaques. The tactile identification shall not be less than 4 feet 6 inches nor more than 5 feet 6 inches above the floor, mounted on the wall adjacent to the door of the space identified, on the side nearest the door handle.

b) Floor numbers at Elevators. Floor numbers shall be tactilely identified for the visually handicapped by raised or recessed numbers attached to the elevator door jamb at each floor, not less than 3 feet, 6 inches nor more than 4 feet, 6 inches above the floor.

c) Elevator controls. Elevator controls shall have tactile identification by raised or recessed letters, labels or plaques.

d) Door handles. Doors to stairs other than exit stairs, loading platforms, boiler rooms, stages, and doors serving other hazardous locations shall have knurled or similarly marked door handles.

Drawings 55-4, 55-5, 55-6, 55-7 and 55-8). (See end of paper).

FIXTURES, DETAILS, ETC. OF
COMMUNITY, MANAGEMENT AND
ANCILLARY SPACES

615-5.1. Plumbing. In housing for the elderly, hot and cold water shall be supplied to all plumbing fixtures except water closets, urinals, bedpan washers and drinking fountains, each of which will be supplied with cold water only.

5.4. Stairs.

5.4.1. Steps in stairs that might require use by those with disabilities defined in 2.2. and 2.5. or by the aged shall not have abrupt nosings.

5.4.2. Stairs shall have hand-

UBC 5506. Controls and Electrical Switches. The top of controls for elevator controls, thermostats, manual fire alarms and similar equipment in all buildings regulated by this chapter and electrical switches and receptacles in dwelling units

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FIXTURES, DETAILS, ETC. OF
COMMUNITY, MANAGEMENT AND
ANCILLARY SPACES -- (cont.)

615-6.1. Domestic water heating systems and storage. In housing for the elderly, the quantity of hot water for personal use shall be not less than that required for multi-family use. In addition, the quantity and temperature of hot water for central kitchens and laundries shall be adequate to serve the equipment installed, and the quantity and temperature of hot water supplies to hospital-type fixtures and equipment shall be that recommended by the Public Health Service.

616-4.9. Illumination. In housing for the elderly, each stairway, hall corridor or general passage, shall have 6 foot-candles of illumination, doubled at building and stair entrance or change of floor level or at slopes.

616-6.3. Emergency Lighting. In housing for the elderly, emergency lighting shall be provided for exits, elevators, stairs and corridors which shall be supplied by an alternate emergency power service, an automatic emergency generator or battery with automatic switch.

rails 32 inches high as measured from tread at the face of the riser.

5.4.3. Stairs shall have at least one handrail that extends at least 18 inches beyond the top step and beyond the bottom step.

5.4.4. Steps should, wherever possible, and in conformance with existing step formulas, have risers that do not exceed 7 inches.

5.5. Floors.

5.5.1. Floors shall have a surface that is non-slip.

5.5.2. Floors on a given story shall be of a common level throughout or be connected by a ramp in accord with 5.1.1. through 5.1.6. inclusive.

5.6. Toilet rooms.

It is essential that an appropriate number of toilet rooms, in accordance with the nature and use of a specific building or facility, be made accessible to, and usable by the physically handicapped.

5.6.1. Toilet rooms shall have space to allow traffic of individuals in wheelchairs.

5.6.2. Toilet rooms shall have at least one toilet stall that --
(1) is 3 feet wide
(2) is at least 4 feet 8 inches, preferably 5 feet deep
(3) has a door (where doors are used) that is 32 inches wide and swings out
(4) has handrails on each side, 33 inches high and parallel to the floor, with 1½ inches clear-

regulated by this chapter shall be no higher than five feet above the floor.

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FIXTURES, DETAILS, ETC. OF
COMMUNITY, MANAGEMENT AND
ANCILLARY SPACES -- (cont.)

ance between rail and wall, and
fastened securely at ends and
center.

(5) has a water closet with the
seat 20 inches from the floor.

5.6.3. Toilet rooms shall have
lavatories with narrow aprons which
when mounted at standard height are
usable by individuals in wheel-
chairs; or shall have lavatories
mounted higher, when particular
designs demand, so that they are
usable by individuals in wheel-
chairs.

5.6.4. Some mirrors and shelves
shall be provided above lavatories
at a height as low as possible and
no higher than 40 inches above the
floor, measured from the top of
the shelf and bottom of the mirror.

5.6.5. Toilet rooms for men
shall have a wall-mounted urinals
with the opening of the basin 19
inches from the floor, or shall
have floor-mounted urinals that
are on level with the main floor
of the toilet room.

5.6.6. Toilet rooms shall have
an appropriate number of towel
racks, towel dispensers and other
dispensers and disposal units
mounted no higher than 40 inches
from the floor.

5.10. Controls.

Switches and controls for light,
heat, ventilation, windows, drap-
eries, fire alarms, and all similar
controls of frequent or essential
use, shall be placed within reach
of individuals in wheelchairs.

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UNIT/EXTERIOR INTERFACE
AT UNIT ENTRANCE

609-6.5. Flooring. Adjacent dissimilar materials shall be flush with each other to provide an unbroken surface. Thresholds and expansion joint covers shall be flush with the floor.

5.3. Doors and Doorways.

5.3.1. Doors shall have a clear opening of no less than 32 inches when open and shall be operable by a single effort.

5.3.2. The floor on the inside and outside of each doorway shall be level for a distance of 5 feet from the door in the direction the door swings and shall extend 1 foot beyond each side of the door.

5.3.3. Sharp inclines and abrupt changes in level shall be avoided at doorsills. As much as possible, thresholds shall be flush with the floor.

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UNIT DESIGN, SQUARE FEET, LIGHT,
AIR, FIRE AND PERSONAL SAFETY,
ETC.

401-3.3. Space allocations in
Bedrooms.

b. Each bedroom shall accommodate
at least the following furniture
or its equivalent with comfortable
use and circulation space:

(3) Single Occupancy Bedroom:

1 twin bed, 3'-3" x 6'-10"

1 dresser, 1'-6" x 3'-6"

1 chair, 1'-6" x 1'-6"

1 desk, 1'-8" x 3'-6"

c. In housing for the elderly,
beds shall be accessible from two
sides and one end.

b. In housing for the elderly,
a convenience outlet for receiving
a night light shall be provided
between the bed location and the
bathroom.

401-5.2. Bedroom closets. In
dwellings designed for wheelchair
users, one bedroom closet shall
have a rod adjustable to 48 inches
above the floor.

402-3.2. Minimum doorway widths
shall be:

Bathrooms--2'-8" for elderly or
wheelchair access.

Habitable rooms--2'-8" for
elderly or wheelchair access.

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UNIT DESIGN, SQUARE FEET, LIGHT,
AIR, FIRE AND PERSONAL SAFETY,
ETC. -- (cont.)

402-4.2. Halls. Minimum clear widths of halls and corridors shall be:

Halls within living units for wheelchair users shall be 3'-4".

402-6.6. Stairways. Maximum riser height is 7 1/2 inches in housing for the elderly. Winders are not permitted.

405-8.3. Flame spread. Flame spread of walls and ceiling in housing for the elderly shall not exceed 75.

509-4.4. Abrasive wall finish such as a sand finish shall not be used in housing for the elderly.

509-5.3. Finish flooring. Floors in housing for the elderly shall be slip resistant.

609-6.5. Resilient Flooring. Adjacent dissimilar materials shall be flush with each other to provide an unbroken surface.

615-5.4. Valves and fittings. In housing for the elderly, non-scald valves shall be used in the water supply to each shower.

616-4.4. Night lights. In housing for the elderly, bedrooms and combination living-sleeping areas shall have a night light and general illumination. The outlets for general illumination and night lights shall be switched at the

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UNIT DESIGN, SQUARE FEET, LIGHT,
AIR, FIRE AND PERSONAL SAFETY,
ETC. -- (cont.)

door. Night lights should be no
more than 2 feet above the floor.

616-5.4. In housing for the
elderly, each bedroom shall not have
less than two duplex receptacles per
bed, with at least one receptacle at
the head of each bed. All other
spaces shall have general and
special purpose outlets suited to
the needs of the space. Receptacles
in living units shall not be less
than 2 feet above the floor.

616-6.4. Emergency call system.
In projects containing 20 or more
living units of housing for the
elderly, each bathroom and each bed
location shall be furnished with an
emergency call system which will
register a call at one or more
central locations. A duplex unit
may be used for two beds and an inter-
communicating telephone system may
be provided in lieu of a "call" system
where the switching is monitored
during night hours. A signal at
the door is not required in other
than nursing portions.

BATHS, SPECIAL EQUIPMENT AND
REQUIREMENTS

401-4.2. Baths.

f. Additional requirements for
housing for the elderly.

Bathtubs shall be at least 5 feet
long and shall be provided with at
least two grab bars.

A stall shower with a seat and

UBC 5503. Sanitation Facilities.

(a) Where required. In Group H
Occupancies having 8 or more dwell-
ing units or guest rooms, sanitation
facilities shall be provided in
accordance with Table 55-A (See
end of paper). In a multiple building
development, the dwelling units or

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BATHS, SPECIAL EQUIPMENT AND
REQUIREMENTS -- (cont.)

grab bars may be provided in lieu of a bathtub.

Tub or shower bottom surfaces shall be slip resistant.

Grab bars shall be installed to sustain a dead weight of 250 pounds for 5 minutes.

Fixtures in bathrooms of at least 10 percent of the living units of each type (other than types containing more than one floor within the living unit) shall be arranged and space provided to permit access and use by a person in a wheelchair. In all such bathrooms, the entire length of at least one side of the tub shall be accessible to the bather. A stall shower, if provided, shall be at least 4 feet square, without curbs, and with handrails and access in accordance with ANSI A117.1. The lavatory shall also comply with ANSI A117.1.

guest rooms containing sanitation facilities shall not be located solely in one building.

UBC 5503. Sanitation Facilities.
(c) Sizes and Clearances.

1. Toilets. Toilet rooms or compartments shall have not less than 36 inches clear space at the front of the toilet and not less than 36 inches clear width between walls, free of door swing and other obstructions. Toilet seats shall be not less than 17 inches nor more than 20 inches above the floor. Grab bars shall be provided at both sides or one side and rear of the toilet. Such grab bars shall be securely fastened to support a load of not less than 250 pounds. They shall have an outside diameter of $1\frac{1}{2}$ inches and shall have $1\frac{1}{2}$ inches clearance from walls and partitions.

A. A horizontal grab bar shall be mounted so that the lowest point is 10 inches above the toilet seat, and extends not less than 6 inches in front of the toilet bowl. Grab bar shall not be less than 12 inches long.

B. A vertical grab bar shall be mounted 12 inches from the front of the toilet bowl extending from 12 inches above the height of the toilet seat to 30 inches above the toilet seat.

2. Urinals. When provided, urinals shall have a clear access of not less than 31 inches. The front lip of the bowl of a wall-mounted urinal shall not be more than 18 inches above the

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BATHS, SPECIAL EQUIPMENT AND
REQUIREMENTS -- (cont.)

floor.

3. Lavatories. Lavatories shall have a clear access width of not less than 31 inches, clear height of not less than 29 inches to the bottom of the fixture apron, clear height of not more than 34 inches to the rim of the fixture, and a clear depth of not less than 12 inches under the fixture exclusive of bowl and waste pipe. The water control valves shall have lever handles.

4. Bathtubs. When provided, and shower is not furnished, the bathtub shall be equipped with a flexible hose hand shower not less than 6 feet in length, and a vertical height adjustment bar for the showerhead of not less than 4 feet in length. The bathtub shall have a seat, either folding, retractable or fixed, not less than 17 inches nor more than 20 inches above the tub floor and not less than 15 inches deep, and of water resistive material.

Grab bars shall be provided at one side of the bathtub. Such grab bars shall be securely fastened to support a load of not less than 250 pounds. They shall have an outside diameter of $1\frac{1}{2}$ inches and shall have $1\frac{1}{2}$ inches clearance from walls and partitions.

A. A horizontal grab bar shall be mounted not less than 4 inches nor more than 6 inches above the rim of the bathtub. Grab bar shall not be less than 36 inches long.

B. A vertical grab bar shall be mounted 30 inches from the end of the tub extending from a height of

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BATHS, SPECIAL EQUIPMENT AND
REQUIREMENTS -- (cont.)

9 inches to a height of 3 feet 6 inches above the rim of the tub. Water valves shall be single lever control, and shall be accessible from the seat.

5. Showers. When provided, the shower stall shall be accessible for the handicapped with a lip or curb at entry no higher than $\frac{1}{2}$ inch above the floor of the room or stall. The shower stall shall have a seat, either folding retractable or fixed, not less than 17 inches nor more than 20 inches above the shower floor, and not less than 15 inches deep, and of water-resistive material. Grab bars shall be provided at two sides of the shower compartment. Such grab bars shall be securely fastened to support a load of not less than 250 pounds. They shall have an outside diameter of $1\frac{1}{2}$ inches and shall have $1\frac{1}{2}$ inches clearance from walls and partitions.

A. A vertical grab bar shall be mounted on the wall opposite the seat extending from a height of 3 feet to a height of 5 feet above the floor of the shower.

B. A horizontal grab bar shall be mounted on the wall adjacent to the seat 10 inches above the seat. Grab bar shall be not less than 18 inches long.

Water valves shall be single lever control and shall be accessible from the seat.

UBC 5504. Other Facilities.

(b) Toilet room accessories.

1. Mirror and/or shelves. Where

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BATHS, SPECIAL EQUIPMENT AND
REQUIREMENTS -- (cont.)

provided, at least one shall be mounted so that the bottom is no higher than 40 inches above the floor.

2. Towel rack, dispensers, disposal units. Where wall mounted towel racks, dispensers, waste disposal containers, or similar appliances are provided, at least one of each shall be mounted so that working height is not higher than 40 inches above the floor, and shall be free of interference by grab bars or other appliances or fixtures.

KITCHENS, SPECIAL EQUIPMENT
AND REQUIREMENTS

401-4.1. Kitchen.

d. In housing for the elderly, a 72 inch compact kitchen with wall cabinets and with a refrigerator not below the countertop may be used in any size living unit.

f. In housing for the elderly, at least $\frac{1}{2}$ of the 10 percent of the living units with bathrooms designed for wheelchair occupants shall have kitchen equipment, work space and storage space that is accessible to and usable by the wheelchair occupants.

UBC 5503. Sanitation Facilities.

(c) 6. Kitchen sinks. When provided, kitchen sinks shall have a clear access of not less than 31 inches, clear height of not less than 29 inches to the bottom of the fixture apron, clear height of not more than 34 inches to the rim of the fixture and clear depth of not less than 12 inches under the fixture exclusive of bowl and waste pipe. The water control valves shall have lever handles.

UBC 5504. Other Facilities.

(a) Kitchen facilities. In dwelling units in which sanitation facilities for the handicapped shall be provided as follows:

1. Space. Clear space of not less than 5 feet measured between walls, cabinets, appliances or

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KITCHENS, SPECIAL EQUIPMENT
AND REQUIREMENTS -- (cont.)

other obstructions shall be provided. Where cabinets have a base toe space of not less than 6 inches deep and 8 3/4 inches high, the clear space may be measured from such toe space.

2. Range controls. Range control handles shall be located at the front or side of the range.

3. Work space. Work space shall have a clear access width of not less than 31 inches, clear height of not less than 29 inches to the bottom, clear height of not more than 34 inches to the top, and clear depth of not less than 12 inches under the work space. The work space shall have not less than 4 square feet of area with a minimum dimension of 24 inches. It may be fixed, folding or retractable.

DEFINITIONS

Appendix A. "Housing for the Elderly"--A project specially designed for elderly persons (62 years of age or over) which provides living unit accommodations and spaces for common use by the occupants in social and recreational activities and, when needed, incidental facilities and space for health and nursing services for project residents.

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ENFORCEMENT

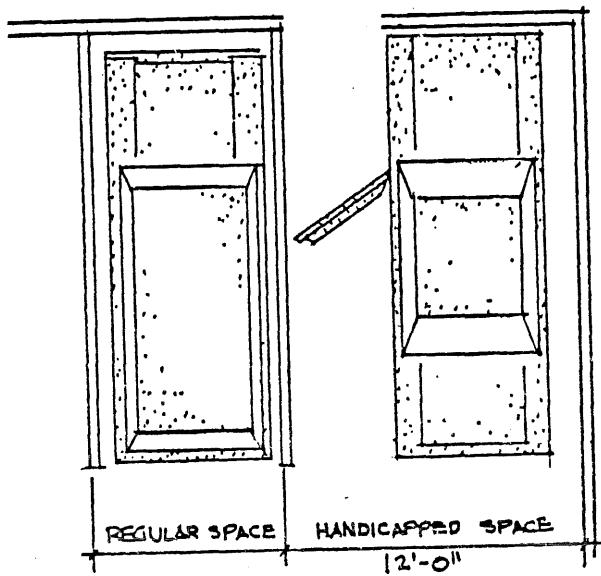
This code is enforced by the U. S. Department of HUD. Any project which receives federal funds or whose financing is guaranteed by any federal agency either in whole or in part must comply with the provisions of this code.

Federal funds for housing include any project financed in whole or in part by HUD, Farmers Home Administration and certain BIA programs.

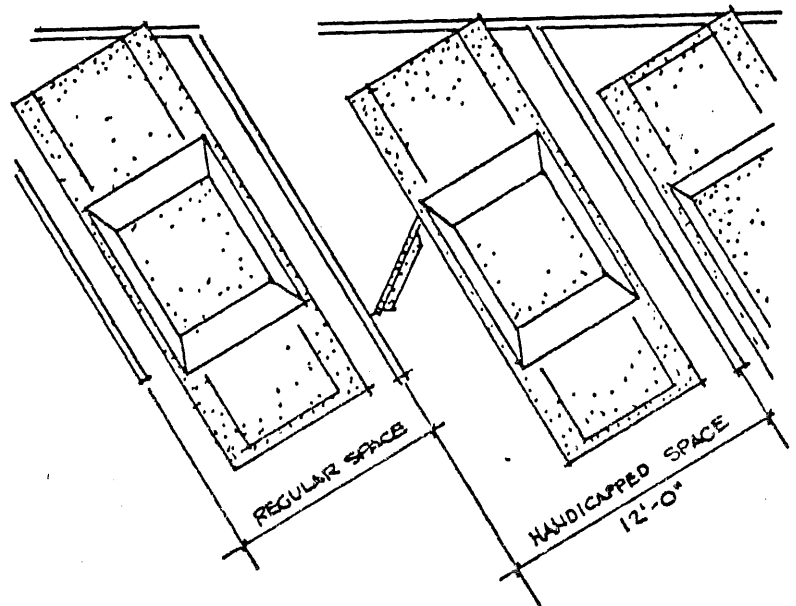
This standard is a part of the HUD minimum Property Standards (adopted by reference) and thus must be complied with on any federal project, as defined previously. It is also the accepted handicapped standard in the country. Although the State of Minnesota has its own handicapped accessibility standard, it closely resembles the ANSI document.

Any building constructed within the State of Minnesota in an area that enforces the State Building Code, must comply with the above provisions. Additionally, any building constructed in an area that does not enforce the State Building Code, but is a public building or a larger private one (including apartment houses with 8 dwelling units or more) must also comply with the above provisions as proscribed by State Law.

UBC 5502(e) Automobile Parking Facilities

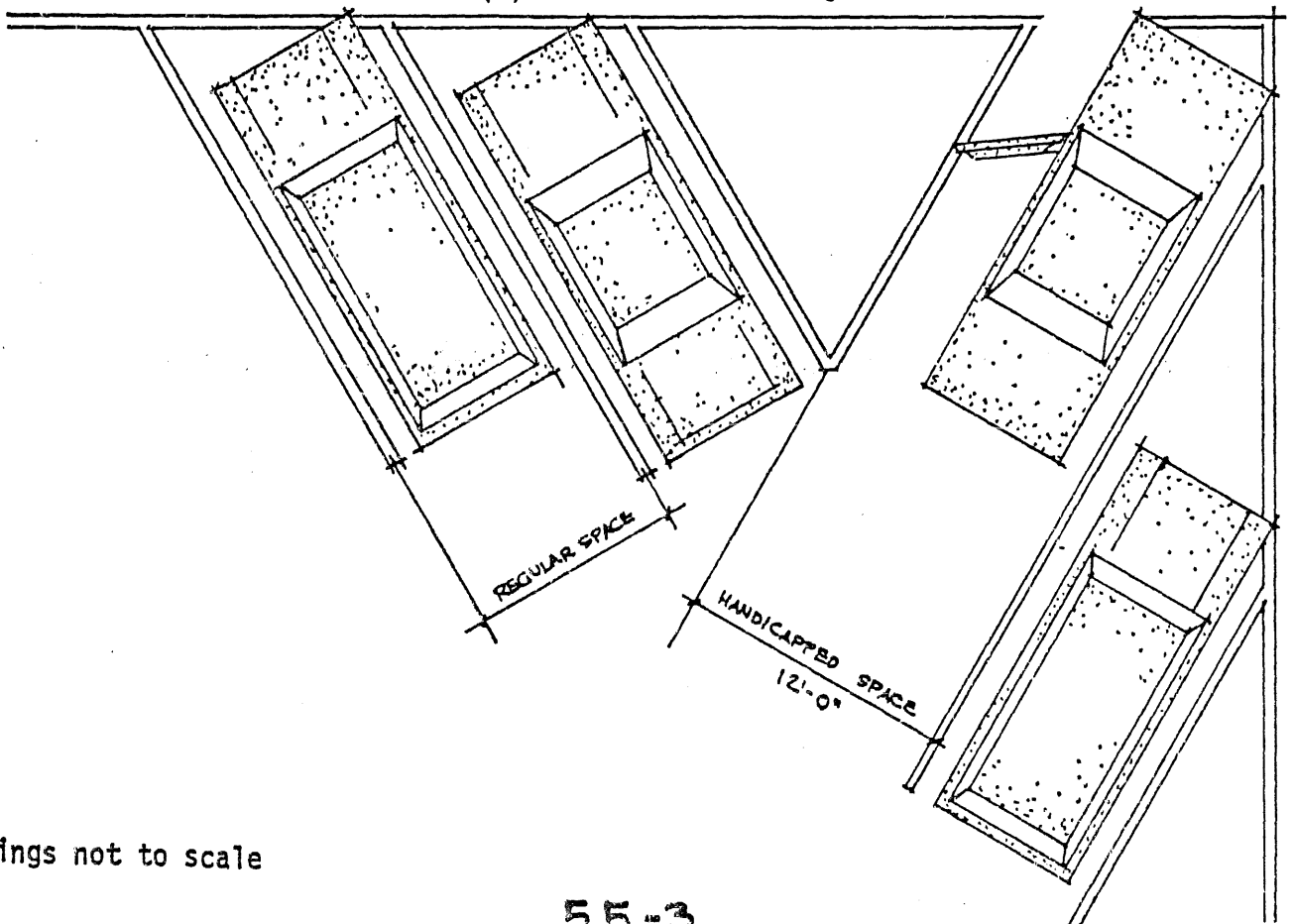


55-1



55-2

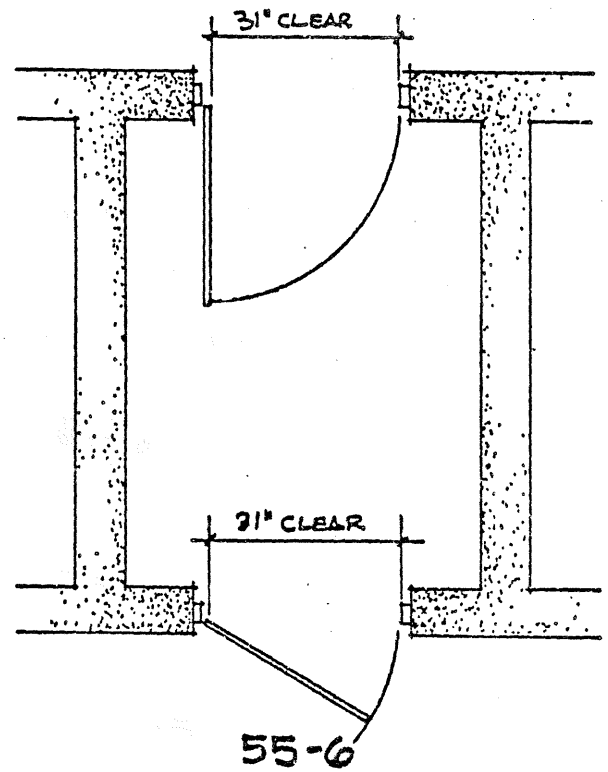
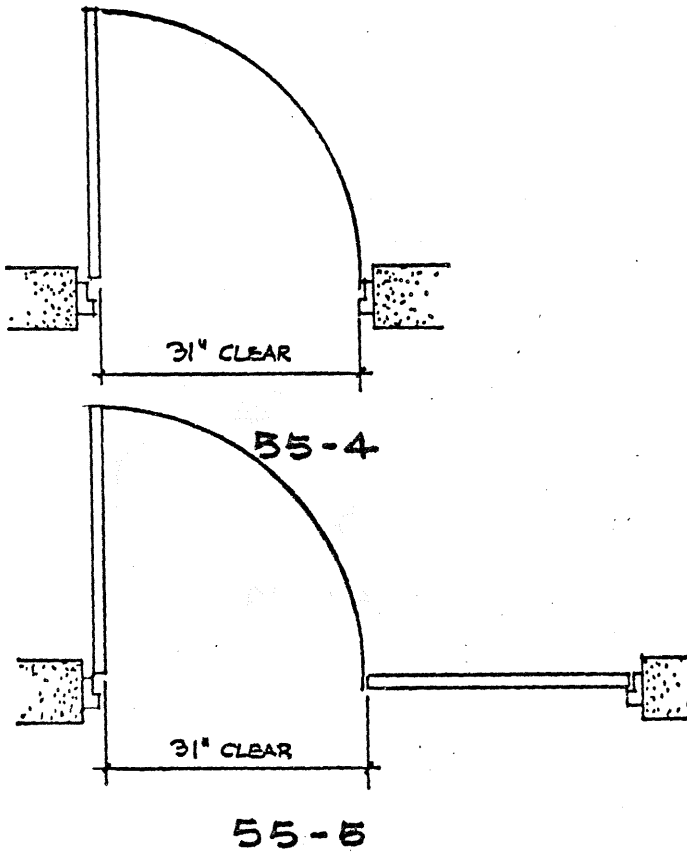
UBC 5502(e) Automobile Parking Facilities



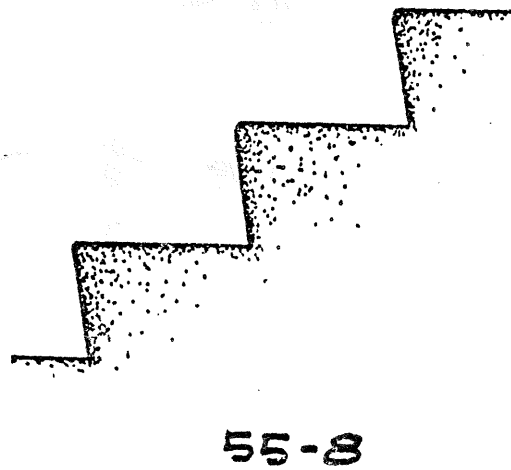
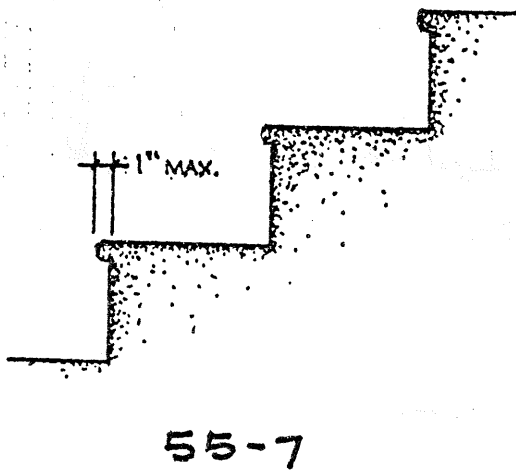
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55-3

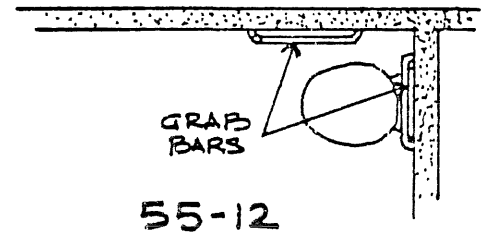
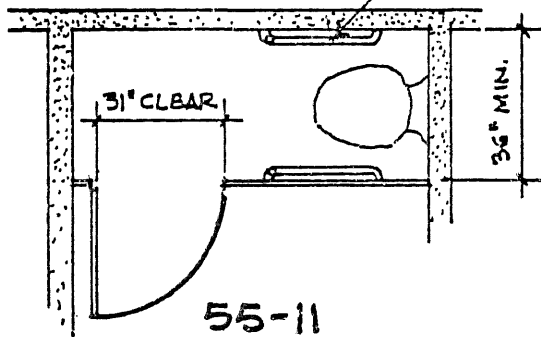
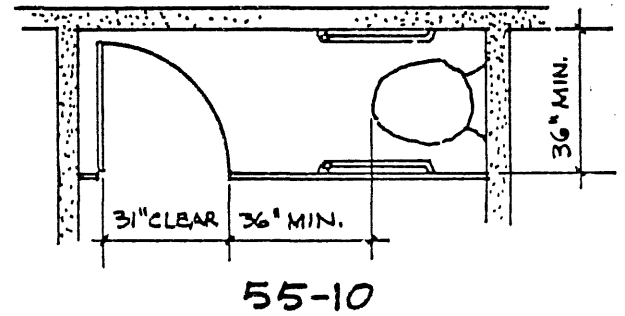
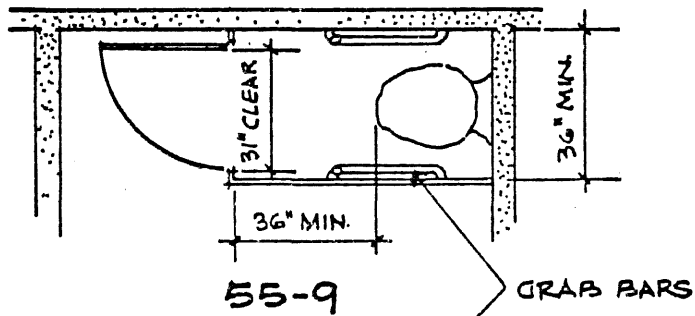
UBC 5502(f) Doors and Doorways



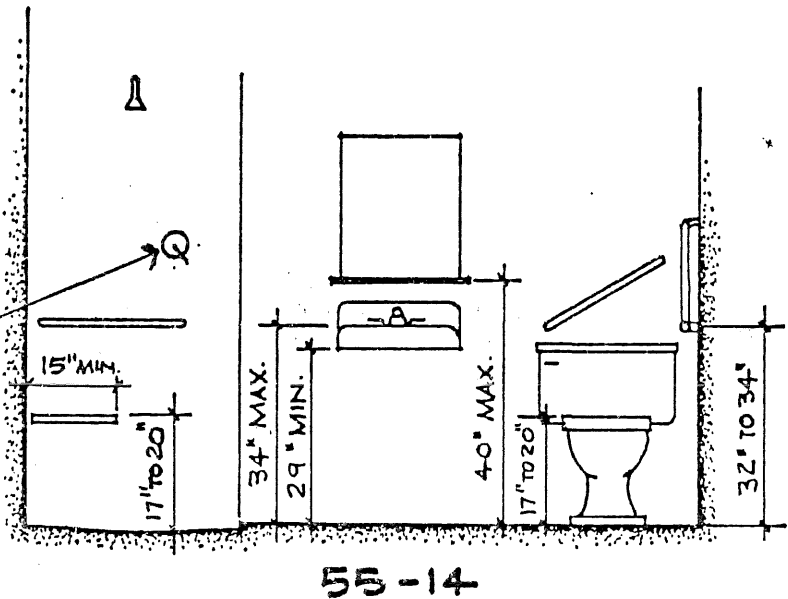
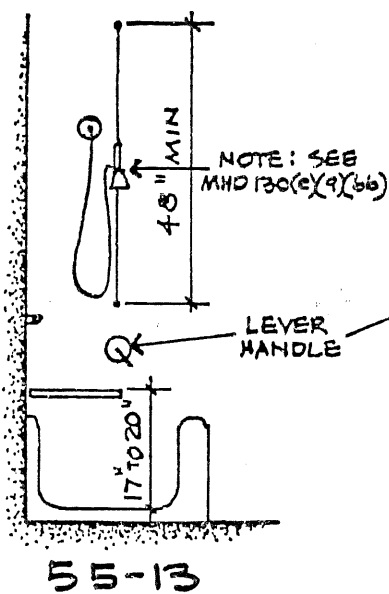
UBC 5502(g) Stair Tread Nosing



UBC 5503(c) Sizes and Clearances

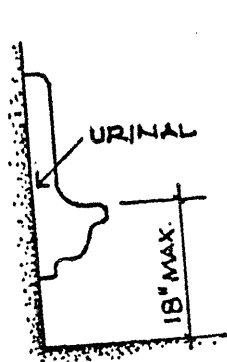


UBC 5503(c) Sizes and Clearances

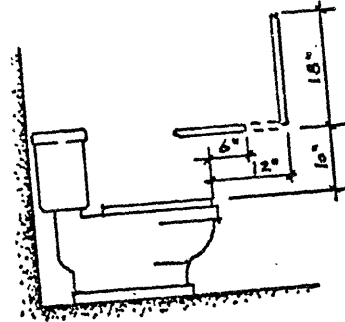


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UBC 5503(c) Sizes and Clearances

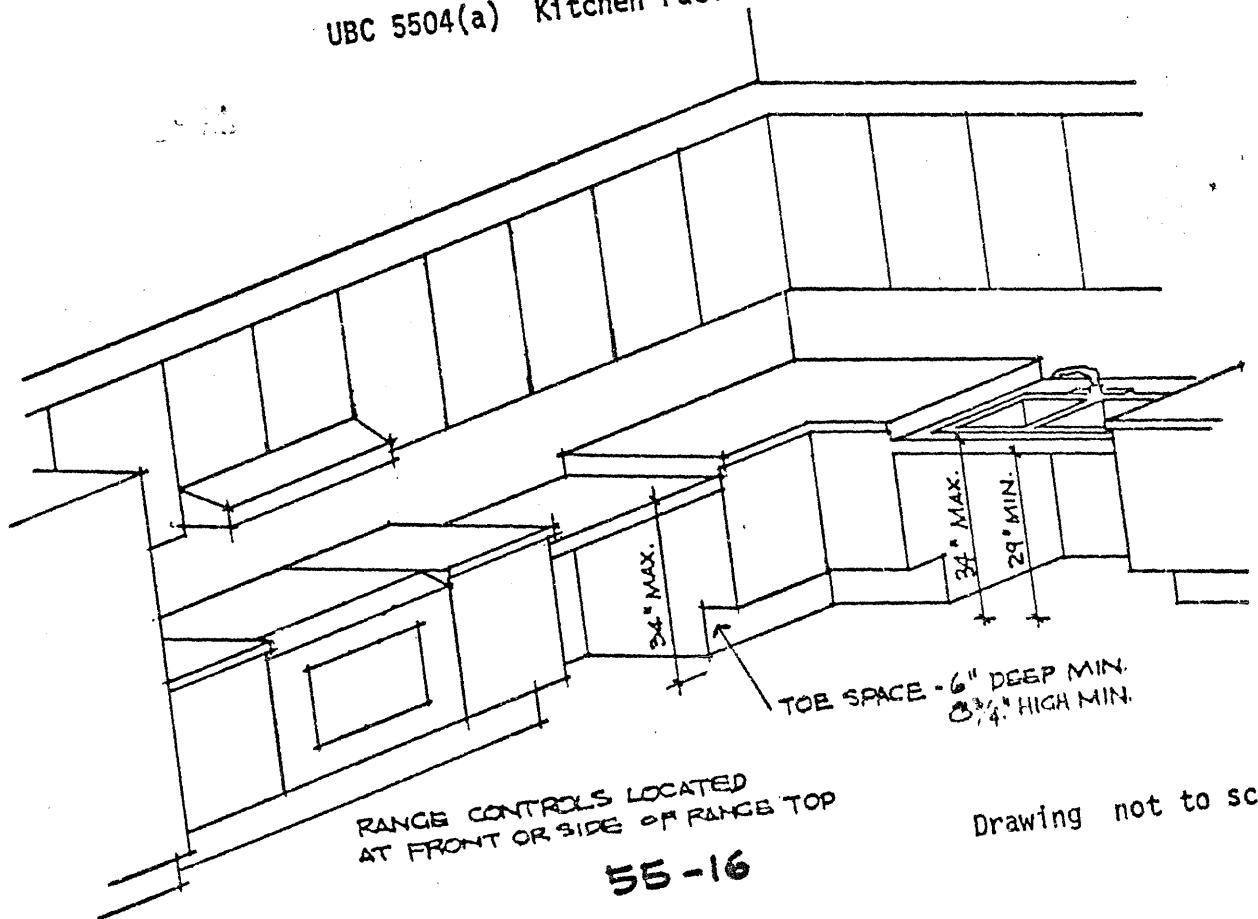


55-15a



55-15b

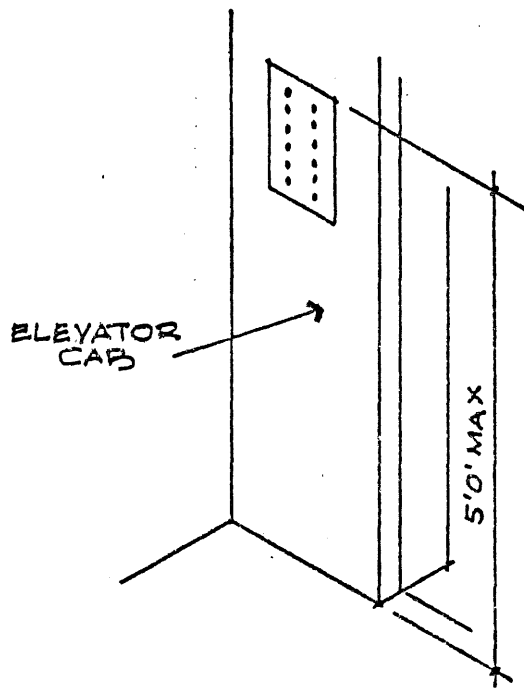
UBC 5504(a) Kitchen Facilities



55-16

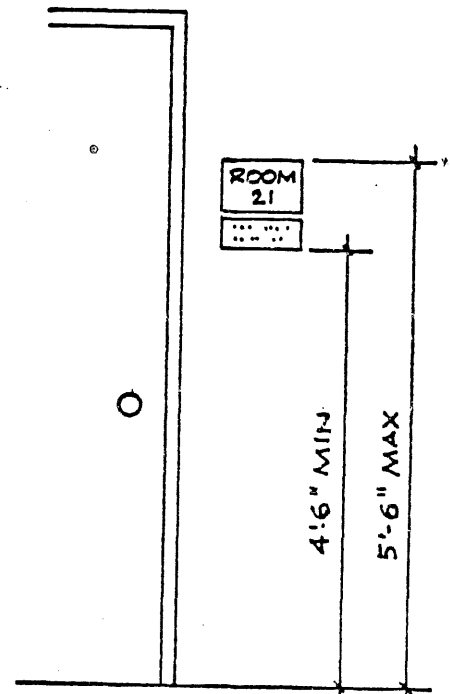
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UBC 5506(b) Elevator Controls



55-17

UBC 5507 Identification



55-18

Table 55-A

Sanitation Facilities for the Handicapped

Number of Dwelling Units/ Guest Rooms in Building	Number of Dwelling Units/Guest Rooms requiring Sanitation Facilities
0 - 7	0
8 - 39	1
40 - 59	2
60 - 79	3
80 - 99	4
100 - 119	5
120 - 139	6
140 - 159	7
160 - 179	8
180 - 199	9
200 -	10 plus 1 per each 50 units exceeding 200

APPENDIX IV

SAMPLE COMMUNITY SURVEY:

HOUSING PREFERENCES

OF THE ELDERLY

SAMPLE COMMUNITY SURVEY:

HOUSING PREFERENCES OF THE ELDERLY

The purpose of this Sample Survey is to provide prospective housing developers with information from the older residents living in the community where a development of elderly housing is being considered.

These questions should give the developer information about the characteristics of the elderly in that community as well as information in regard to the type of housing and services they would prefer.

It should be pointed out that the respondents who say they will move to a new elderly housing development might not do so. Research shows that one-half to two-thirds of those who say they would move, do not. A second important point is that a good community advisory board is essential in order to serve as a complement to the data gained from this survey. From the community advisory board, the prospective developer can obtain information on the preferences of the community residents regarding the development.

Housing Preferences of the Elderly in _____

A. Charateristics

1. What is your marital status?

- ☐ Married
☐ Single
☐ Widowed
☐ Divorced or Separated

If you are married and living with your spouse, please fill out the left side of this page. If you are single, widowed, divorced, or separated, please fill out the right side of this page.

Persons who are marriedPersons who are single, widowed, divorced, or separated

A2. How many people live in your household?

- ☐ Just the two of us
☐ Us and one or more other persons

- ☐ Number of other persons
☐ Number of other persons 60 or over

A2. How many people live in your household?

- ☐ No one besides myself
☐ 1 other person
☐ 2 other persons
☐ 3 or more other persons

If you live with 1 or more other persons, how many of them are 60 or over? _____

A3. What type of housing do you presently live in?

- ☐ A house or townhouse
☐ An efficiency apartment (large room without separate bedroom)
☐ A one bedroom apartment
☐ A two or more bedroom apartment
☐ Other (Specify): _____

_____)

A3. What type of housing do you presently live in?

- ☐ A house or townhouse
☐ An efficiency apartment (large room without separate bedroom)
☐ A one bedroom apartment
☐ A two or more bedroom apartment
☐ Other (Specify): _____

_____).

A4. Do you own your home, rent, or live with others rent free?

- ☐ Own
☐ Rent
☐ Live with others rent free

A4. Do you own your home, rent, or live with others rent free?

- ☐ Own
☐ Rent
☐ Live with others rent free

A5. If you rent, what is the approximate amount per month that you pay for your apartment? (Do not include the cost of utilities)

___ less than \$50 per month
___ \$51-\$100 per month
___ \$101-\$150 per month
___ \$151-\$200 per month
___ \$201-\$250 per month
___ \$251-\$300 per month
___ \$301 or more per month

Is your apartment part of a public or government housing program?

___ Yes
___ No

A6. If you own your own home, what is the approximate amount you pay per month? (Do not include utility payments)

\$ ___ Mortgage Payments
\$ ___ Property Tax
\$ ___ General Upkeep
\$ ___ House Insurance
\$ ___ Property Insurance

A7. About how much money per month do you pay for each of the following utilities? (If you rent and do not directly pay for some of the utilities, write 0 next to those.)

\$ ___ per month-Electricity (NSP)
\$ ___ per month-Gas (Minnegasco)
\$ ___ per month-Water
\$ ___ per month-Phone
\$ ___ per month-Heat (fill this in if heat is not included in your gas or electric bill.)

A8. Which age category are each of you in?

<u>Husband</u>		<u>Wife</u>
___	60-65	___
___	66-70	___
___	71-75	___
___	76-80	___
___	81-85	___
___	86-90	___
___	91&over	___

A5. If you rent, how much do you pay per month? (If you share the rent with one or more other persons, check the line by the amount that is your share of the rent. Do not include cost of utilities)

___ less than \$50 per month
___ \$51-\$100 per month
___ \$101-\$150 per month
___ \$151-\$200 per month
___ \$201-\$250 per month
___ \$251-\$300 per month
___ \$301 or more per month

Is your apartment part of a public or government housing program?

___ Yes
___ No

A6. If you own your own home, what is the approximate amount you pay per month? (Do not include utility payments)

\$ ___ Mortgage Payments
\$ ___ Property Tax
\$ ___ General Upkeep
\$ ___ House Insurance
\$ ___ Property Insurance

A7. About how much money per month do you pay for each of the following utilities? (If you rent and do not directly pay for some of the utilities, write 0 next to those.)

\$ ___ per month-Electricity-(NSP)
\$ ___ per month-Gas (Minnegasco)
\$ ___ per month-Water
\$ ___ per month-Phone
\$ ___ per month-Heat (fill this in if heat is not included in your gas or electric bill.)

A8. Which age category are you in?

___ 60-65
___ 66-70
___ 71-75
___ 76-80
___ 81-85
___ 86-90
___ 91 and over

Circle one

Sex: Male Female

B. Housing Information (Please answer each of the remaining questions in this survey.)

B1. How long have you lived at your current address?

- ☐ less than 1 year
- ☐ 1-5 years
- ☐ 6-10 years
- ☐ 11-20 years
- ☐ 21 or more years

B2. If, for any reason, you were to move, which of the following locations would you consider?

Note: Included here would be a list of all communities in the surrounding area.

☐ same community I'm living in now (_____)
☐ Other (specify): _____

If you checked "Other," what specific reason was there for selecting that community?

- ☐ Friends in that area
- ☐ Family in that area
- ☐ Close to shopping center
- ☐ Other (specify reason): _____

B3. How important are the following in your selection of housing?

	<u>Very</u> <u>Important</u>	<u>Somewhat</u> <u>Important</u>	<u>Not</u> <u>Important</u>
a) Near family and friends	_____	_____	_____
b) Near a grocery store	_____	_____	_____
c) Near shopping facilities	_____	_____	_____
d) Near public transportation	_____	_____	_____
e) Near church or synagogue	_____	_____	_____
f) Near a park	_____	_____	_____
g) Near a hospital	_____	_____	_____
h) Near a clinic or hospital	_____	_____	_____
i) Near people of all ages	_____	_____	_____
j) Near other people your own age	_____	_____	_____
k) Away from noise	_____	_____	_____
l) Where the air is clean	_____	_____	_____
m) Near an area where you feel safe in the street	_____	_____	_____

B3. Continued

	<u>Very Important</u>	<u>Somewhat Important</u>	<u>Not Important</u>
n) Near recreational facilities	_____	_____	_____
o) Near a bank	_____	_____	_____
p) Near a school offering adult education	_____	_____	_____
q) Near a library	_____	_____	_____

B4. Which of the following features do you prefer in a housing unit, and how important are they?

	<u>Very Important</u>	<u>Somewhat Important</u>	<u>Not Important</u>
a) Bedrooms			
Combination livingroom/bedroom	_____	_____	_____
One bedroom	_____	_____	_____
Two bedroom	_____	_____	_____
More than two bedrooms	_____	_____	_____
b) Kitchen size			
Small, efficient kitchen	_____	_____	_____
Spacious kitchen	_____	_____	_____
c) Dining Room			
Separate dining room	_____	_____	_____
kitchen/dining room combination	_____	_____	_____
d) Unit Size			
Large rooms	_____	_____	_____
Smaller rooms that are easier to clean	_____	_____	_____
e) Bathroom			
Bath tub only	_____	_____	_____
Shower only	_____	_____	_____
Tub/shower combination	_____	_____	_____
f) Separate storage room outside of unit	_____	_____	_____
g) Facilities for car			
Garage	_____	_____	_____
Unsheltered parking space	_____	_____	_____
No need for either	_____	_____	_____

	<u>Very Important</u>	<u>Somewhat Important</u>	<u>Not Important</u>
h) Outside Private Area			
Balcony	_____	_____	_____
Patio	_____	_____	_____
i) Garden Area	_____	_____	_____
j) Pleasant place to walk outside	_____	_____	_____
k) Laundry			
Laundry facilities somewhere in the building	_____	_____	_____
Laundry facilities on same floor	_____	_____	_____
l) Emergency Cords in bathroom and bedroom to summon help in case of emergency	_____	_____	_____

B5. How important would you consider these features of a building to be?

	<u>Very Important</u>	<u>Somewhat Important</u>	<u>Not Important</u>
a) Elevator	_____	_____	_____
b) Security System	_____	_____	_____
c) Common (shared) balconies	_____	_____	_____
d) Community rooms	_____	_____	_____
e) High rise building	_____	_____	_____
f) Low rise building	_____	_____	_____

B6. Are you planning on moving?

	<u>Yes</u>	<u>Possibly</u>	<u>No</u>
a) Within the next year	_____	_____	_____
b) Within the next 1-3 years	_____	_____	_____
c) Within the next 3-5 years	_____	_____	_____

B7. If you could select 5 of the following features, which ones would you choose? Number them in order of importance: 1 = most important, 5 = least important.

Number

- () Window sills large enough for potted plants
- () Emergency cords in the bathroom
- () Emergency cords in the bedroom
- () Carpeting in living room, bedroom and halls
- () Waist high oven
- () Larger than average freezer compartment
- () Side opening oven door

B7. Continued

Number

- () Electric outlets at table height
- () Air-conditioning
- () One-handled faucet control
- () Central T.V. antenna
- () Grab bars in bathroom
- () Walk-in closet

- | | Yes | No |
|------------------------|-------|-------|
| B8. Do you own a car? | _____ | _____ |
| B9. Do you have a pet? | _____ | _____ |

If "yes" what kind (Specify): _____)

B10. If the following services were available to you at your home would you use them?

	<u>Yes</u>	<u>No</u>	<u>I am already receiving this service</u>
a) Home delivered meals	_____	_____	_____
b) Door to door transportation	_____	_____	_____
c) Escort Service (person to accompany you and to provide assistance)	_____	_____	_____
d) Friendly Visiting	_____	_____	_____
e) Telephone Reassurance (one phone call a day to make sure you are O.K.)	_____	_____	_____
f) Nursing Care (giving shots, changing dressing, help with medication)	_____	_____	_____
g) Personal Care (help with grooming, bathing, and other routine personal activities)	_____	_____	_____
h) Housekeeping (help with chores in- side the home such as laundry, cleaning, dishwashing)	_____	_____	_____
i) Home maintenance and repair (heavy cleaning, yard work, help with screens, and storms, minor home repairs)	_____	_____	_____

B11. If an apartment building designed for the elderly were built in the following locations would you consider moving in?

	<u>Definitely</u>	<u>Perhaps</u>	<u>Unlikely</u>	<u>No</u>
a) _____	_____	_____	_____	_____
b) _____	_____	_____	_____	_____
c) _____	_____	_____	_____	_____

B12. Do you feel that there should be more housing for older people in your present community?

☐ Yes

☐ No

B13. If housing for the elderly were to be planned in your community, would you be willing to serve on a community advisory board, to assist professionals in the plans for the construction of the housing?

☐ Yes

☐ Possibly

☐ No

If you answer yes or possibly we would like you to fill out the enclosed card for our information. This separate card is provided to assure you of confidentiality in your responses to this questionnaire.

B14. This space is reserved for any special remarks or concerns that you may wish to make in regard to this questionnaire and/or matters concerning housing for the elderly.

Thank you for your cooperation.