Domestic and Foreign Urban Continuing Care Retirement Communities of Today and Tomorrow

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Abstract

The purpose of this study is to define the problems associated with residents in housing for the elderly, classify types of facilities for the elderly, and define types of continuing care retirement communities (CCRCs). The report will also analyze case studies of significant urban and suburban CCRCs and point the way toward enhanced architectural solutions to meet society's need for healthier and more satisfactory living environments for the elderly. The case study provides a brief introduction to select domestic and foreign CCRCs with notable design features.

Developed countries, such as the U.S. and Korea, have experienced tremendous growth of their elderly populations. This continued population shift has created a need for the design of quality, home-like retirement living facilities.

Over the past decade, life expectancy in the U.S. has increased to 75 years,according to the U.S. Administration on Aging. By 2050, it is estimated that 80 million Americans–more than one in five–will be in the senior category. Even more startling, the U.S. Bureau of Census estimates that by the year 2050, more than 31 million persons will live to be 85 and older. In fact, a 30 percent increase in the 85-plus population is projected to take place in this upcoming decade.

Currently, seven million elderly Americans need long-term care. That number will increase to 10 to 12 million in 2020, according to the Organization for Economic Cooperation and Development. In Korea, the elderly population grew from 3 percent in1970 to approximately 4 percent in 1980, and has continued to rise. Today, more than 7percent of the Korean population is 65 and over. By 2030, it is expected to include more than 10 million residents over 65 years of age. As in the U.S., the need for continuing care retirement communities in Korea is attributed to a shift in family values, increased urbanization, and enhanced financial status of the elderly.

Chart A

Year	Number of elderly in Korea	Korea(%)	USA(%)	UK(%)	Japan(%)
1960	726,450	2.9	9.2	11.7	5.7
1970	991,306	3.1	9.8	12.9	7.1
1975	1,217,447	3.5	10.5	14.0	7.9
1980	1,456,033	3.8	11.2	15.1	9.1
1985	1,741,849	4.3	11.8	15.4	10.3
1990	2,195,084	5.1	12.4	15.7	12.0
1995	2,656,652	5.9	12.6	15.8	14.5
2000	3,370,568	7.1	12.4	15.8	17.2
2005	4,252,919	8.7	12.7	16.2	19.6
2010	5,032,146	9.9	13.0	16.5	22.0
2015	5,846,461	11.3	14.7	17.8	25.2
2020	6,899,269	13.2	16.3	19.1	26.9
2025	8,613,115	16.3	18.3	20.3	27.4
2030	10,164,832	19.3	20.0	21.9	28.0

The growth of the elderly population (National Statistical Office, 1996)

The design of today's long-term care facilities promotes dignity and independence, and the care environment takes into consideration the individual needs of each resident. Careful design planning allows residents to feel that they are at home--not in a health-care institution. The facility also welcomes visitors,from toddlers to adults.

Challenges associated with the elderly

There are definite physical changes that occur with age. According to the Institute of Gerontology, the normal aging process produces sensory losses, including impaired vision and a loss of hearing and sense of touch. Mobility is also lost due to decreased muscle strength, reflex time, and diminished energy levels.

For most people, vision is by far the most important sensory channel. Older individuals have an impaired ability to adapt to changes in light levels, reduced visual acuity and contrast sensitivity, as well as a restricted field of vision and depth perception. Restricted color recognition and sensitivity to glare are also part of the aging process. Along with vision, hearing, smell, taste, and touch are also affected by age, thus sensory changes should be considered in the design of long-term care facilities. For example, color perception changes as the eyes age. It is often easier for older people to

differentiate yellows, oranges, and reds as opposed to than lavenders, browns, blues, and greens. Variations of floor materials and wall treatments can help distinguish functioning spaces. Doorframes, light switches, exposed pipes, and other details should be visually prominent to ensure safety.

Chart B

age	30		40		50		60		70		80		90	
Losses														
Separation of Children						■								
Death of Peers								■						
Loss of Spouse								■						
Motor Output Deterioration										■				
Sensory Acuity Losses								■						
Age Related Health Problems												■		
Reduced Physical Mobility												■		
Loss of Income								■						
Loss of Roles								■						

The age loss continuum (Institute of Gerontology, 1990)

How to best design the facility

In addition to physical activity, older residents need a sense of control of their lives–at a time when many decisions are being made for them. In many cases, residents and their families ask for private rooms or semi-private rooms with less institutional layouts. In these cases, the opportunity to bring their own furniture and make decisions about the room décor may allow residents some active participation and a chance to feel in control.

Residents should also have the opportunity to choose from a variety of spaces tin which o spend time–as if they were in their own homes. Flexible space for programmed activities--from classrooms to garden areas--must be designed to support the specific needs of each individual resident within the community. Outdoor recreation, fitness/rehab, and various therapy areas can be incorporated in many facilities to promote wellness.

The physical safety and emotional security of aging individuals is a main concern for residents and family members. Not only do facilities need to plan for each resident's safety and security, provisions must also be made to ensure that non-residents are not allowed easy access. Various federal, state, and local codes and regulations for sanitation, safety, flammability, toxicity, seismic safety, lighting, accessibility, and energy consumption address many of these concerns. However, additional security-related features are becoming part of facility design. For instance, security fences (which can be concealed through the use of attractive landscaping) and video monitoring systems are becoming part of many facilities.

Today's long-term care facilities are being designed as neighborhoods, not institutional settings. A variety of spaces are offered to promote one-on-one interaction, as well as group gatherings to make people feel at home. The spaces most effective in supporting observation and social activities are entry areas inside and directly outside of the facilities.

Many activity areas are planned to allow both passive and active social interaction. Seating can be designed to offer views to the outside, providing opportunities for observing activities in the immediate area. Another emerging trend in the long-term health-care industry is to create a "town center" providing retail and social activities in the middle of the complex. Included in the center are retail stores (for clothing, crafts, groceries, etc.) and various rooms to house activities ranging from billiards to quilting. This type of spatial arrangement allows residents to manage many of the retail and activity areas. Physician offices, pharmacies, and financial planning and post office facilities can also be part of the town center

Wayfinding is the cognitive process that allows a person to navigate to a particular floor, area, and room – then back again. A simple, straightforward building plan can aid this process. Finishes, colors, detailing, lighting, artwork, and sculptures provide nonverbal wayfinding clues for residents traveling from a floor to a particular area. A glass-encased display located outside of the resident's room allows the presentation of personal memorabilia and acts as a visual cue. Access to the outdoors and windows with outdoor views can help with orientation to time and season.

The following are additional design considerations for the elderly care facilities:

- *Movement.* Because the elderly are less mobile than most patients, the environment should introduce visual stimulation and incentives for movement, including accommodation of wheelchairs
- *Physical impairments.* Because the elderly often have impaired vision, hearing, and touch, the design should place handles, handrails, knobs, and grab bars at appropriate locations. (Because the body's center of gravity tends to move forward with age, the ramps are inadvisable, particularly in facilities housing people with multiple disabilities
- *Lighting.* Lighting should be free of glare and flicker; improper lighting can cause deterioration of the retina. Particularly in bathrooms, lighting must be strong to avoid injuries. Indirect, incandescent lighting is ideal
- *Acoustics.* Because excess noise is stressful to the elderly, consider using carpeting and other acoustically absorbent materials
- *Color.* Bold use of contrast and bright colors, including for graphics and signage systems, enlivens the environment for the elderly and aids in orientation and movement
- *Texture.* Because the sense of touch is often deficient among the elderly, textures should be widely varied. Special attention should be given to finishing materials and to handrails, doorknobs, and chair arms
- *Odor.* The sense of smell is often the most acute sense in elderly persons. Attention should be given to maintaining cleanliness, controlling food odors, and creating a home-like environment
- *Privacy***.** It is extremely important to provide privacy in sleeping areas. Lounges and activity areas likely to be the site of family visits should also be private.

To provide quality environments, architects, as well as interior and environmental graphic designers, have an obligation and a responsibility to understand the changes that occur in the aging process and the special needs resulting from those changes. One practical way of gathering this kind of data is to actively involve current and potential residents and their families as well as nursing staff and physicians in the overall planning of the facility.

Continuum of care

Facilities for the elderly can usually be characterized by specific supportive, living, and/or social environments as well as physical settings provided for the delivery of personal, social, and health-care services. The elderly can have a variety of living alternatives, including independent living in conventional housing, retirement communities, relatives' homes, or hospitals. A resident will move from one type of residence to another according to their needs.

Chart C

Level of Dependence	**Facility Type**
Very Low	Single-Family Housing/Apartments
Moderate-Low	Elderly Housing (Multi-unit) Group Homes Senior Centers
Moderate	Congregate Housing
Moderate-High	Nursing Homes Intermediate Care Facilities Skilled-Nursing Facilities Continuing Care Retirement Community
High	Rehabilitation Hospitals Acute-Care Hospitals

Spectrum of facility types for aging (American Institute of Architects)

In the U.S., continuing care retirement communities (CCRCs) were managed by non-profit organizations until the 1980s. Most of the earlier retirement communities were designed and built on the West Coast and in the Midwest. One of the first CCRCs was the Hollenbeck Home, built in Los Angeles in 1895 (according to the U.S. Conference of Mayors *"1996 Elderly Housing Study."*) However, most retirement communities were built after World War II. At that time, only 5 percent of the 27 million elderly were living in retirement facilities. As long-term housing needs in the U.S. and Korea continue, more CCRCs will need to be built and designed.

CCRCs provide the broadest types of services delivered in facilities for the elderly. The retirement communities provide independent housing, residential care, social services, a senior/community center, and nursing home care all within a site,

based on the concept of continuum of care. CCRCs can range from communities of detached housing to apartments in an urban high-rise or other single buildings to clustered buildings in a campus-like setting. The following is an outline and description of various CCRCs.

1. Residents can maintain an independent lifestyle and have access to on-site health-care services with *independent living units*
2. *Residential care*, also known as *assisted-living or personal-care units,* provides residences and personal services that support daily routines such as bathing, medication, and meals. Most often, they offer health-care and nursing services on site
3. *Skilled nursing facilities* are occupied by residents who typically are bedridden and have multiple health problems requiring continuous nursing care and supervision.

Chart D

Type	Unit Type	Provided Service	Assignable public area
Independent Living Units	Focused on one bedroom unit. Unit size : 27' by 40'	Unit maintenance Comprehensive medical check-up (1 to 2 times/year) Health check-up/month Leisure program	6 : 4
Assisted Living Units	Unit size is smaller than independent living unit Unit size : 20' by 30'	Food Laundry and cleaning Personal assistance Comprehensive medical check-up Health check-up Consultation Leisure program	5.5 : 4.5
Nursing Home	4 patient/unit 7.4/patient in semiprivate room 14/patient in private room	Food for patient Cleaning and laundry Personal assistance Medical, physical therapy service 24 hour nursing care	2 : 8

Characteristics of each service level

A CCRC generally houses 300 to 500 units to economically justify the needed management, services, and health-care services. Retirement communities can be classified according to the location, such as urban, suburban, resort or rural types. Each type has advantages and disadvantages. Urban retirement communities allow easy contact with the resident's family, as well as with nearby community activities. However, the rent or cost to purchase the facility is typically high. Suburban retirement communities are lower in cost, but may cause a sense of isolation for residents used to urban living. The benefits of resort/rural retirement living include views of nature and low

rent or cost of living. However, the location may cause a sense of isolation and loneliness due to a lack of contact and community activities.

Selected Continuing Care Retirement Communities

The following are case studies of selected urban and suburban CCRCs in the U.S. and Korea. The analysis includes overall site and design concepts, such as building orientation, daylight, privacy, safety, circulation, etc.

Chart E

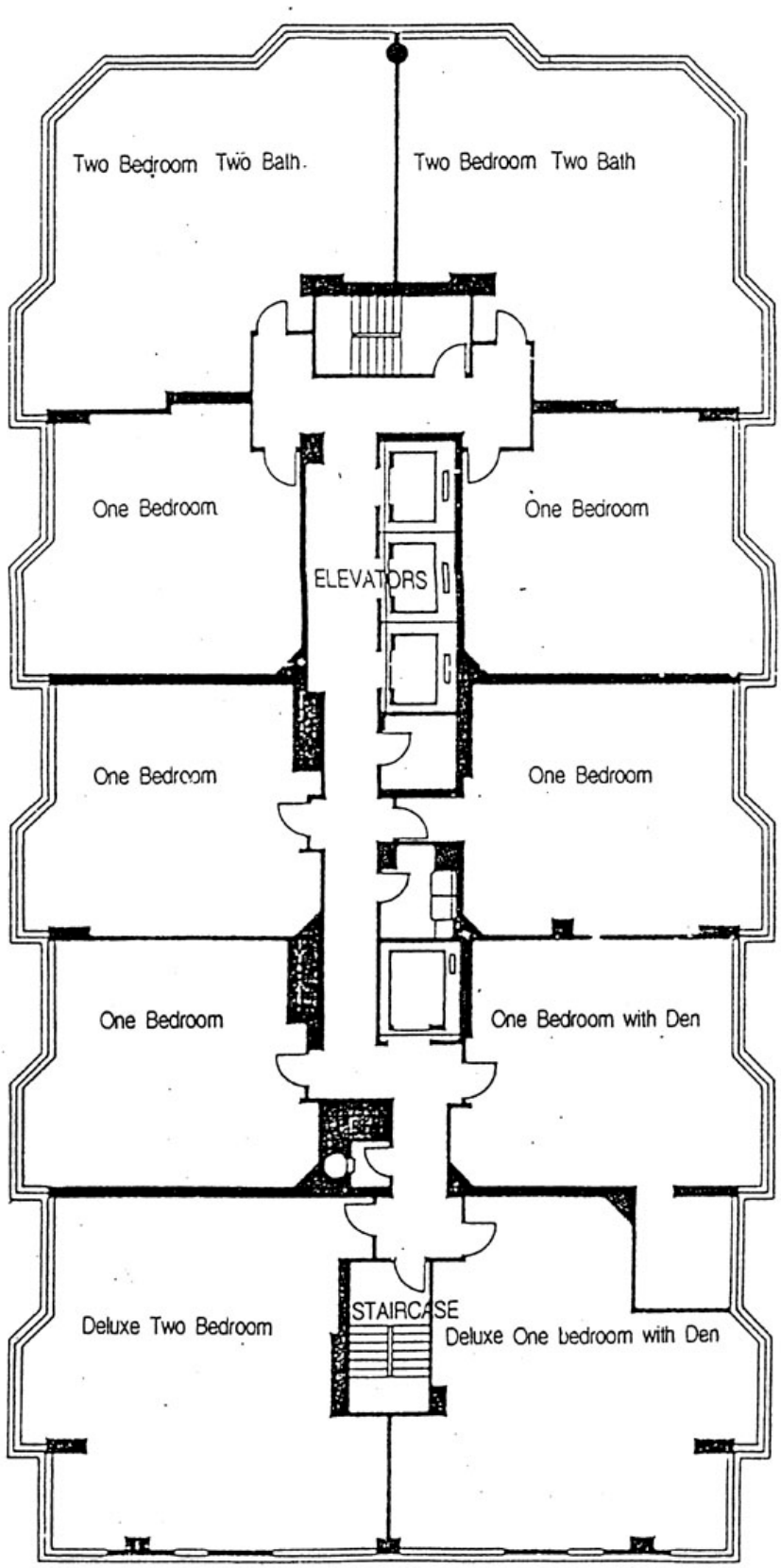
Name of Facility	Location	Type	Construction Year	Stories (max.)
Hallmark Residences	Chicago, Illinois (Urban)	High Rise	1990	34
USAA	San Antonio, Texas (Suburban)	Low + High Rise	1988	20
The Jefferson	Arlington, Virginia (Suburban)	High Rise	1992	21
Seoul Silver Tower	Seoul, Korea (Urban)	Low + High Rise	1998	14
Noble County	Yong In, Korea (Suburban)	Low + High Rise	2000	20
Washoe Village	Reno, Nevada (Suburban)	Low Rise	2000	3

Selected Facility Descriptions

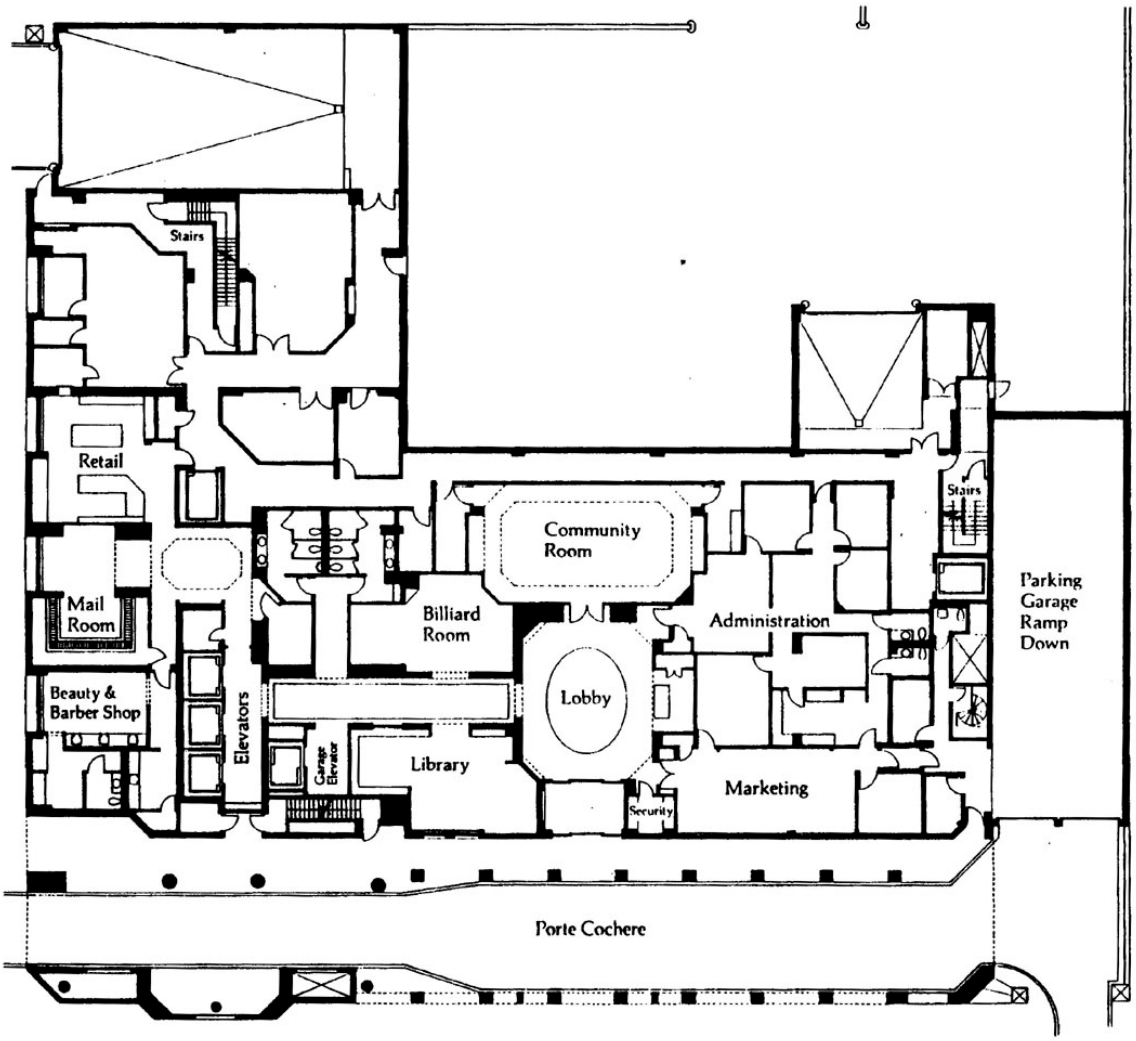
Hallmark Residences
Chicago
Site area: 0.91 acres
Area of building: 481,180 square feet
Capacity: 340 independent apartments and four guestrooms
Year completed: 1990

The Hallmark Residences is a high-rise apartment building for the elderly in Chicago; the average age of residents is 85. The 34-story urban tower provides each apartment with an excellent view of Lake Michigan; each living room has a bay window with a partially lowered sill. The common areas are located at the building's three-story podium area. The building was designed to accommodate daylight, providing a humanizing environment for residents. While most of the residents are independent, medical services are also available at the complex.

Hallmark Residences



Hallmark Residences



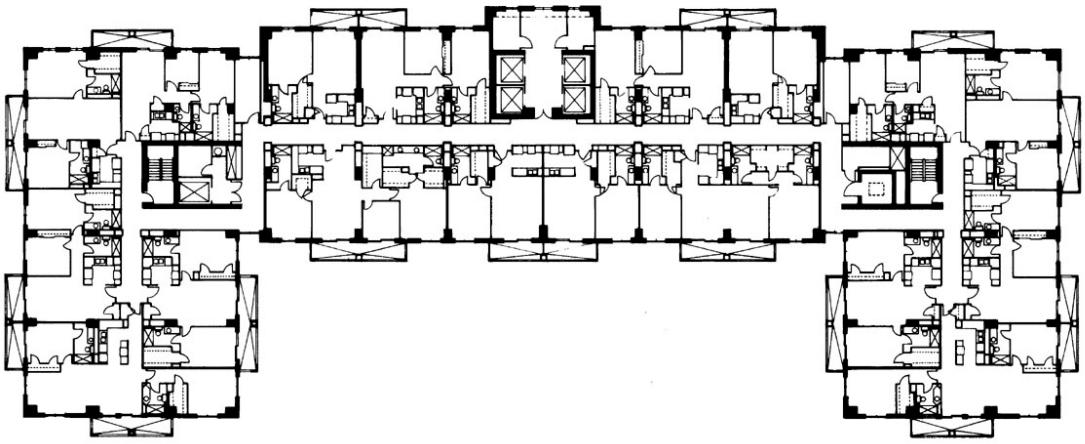
First Floor

Hallmark Residences

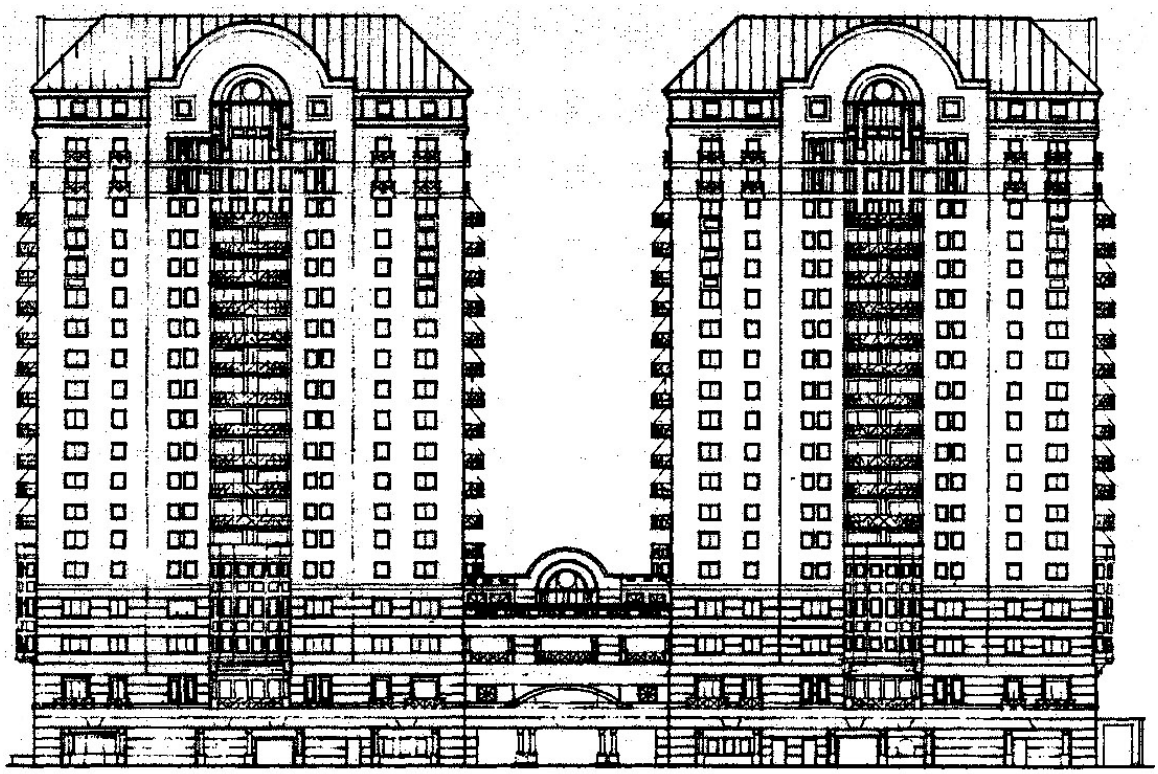
Hallmark Residences

USAA
San Antonio
Site area: 8.74 acres
Area of building: 730,000 square feet
Capacity: 263 independent apartments; 60 assisted-living, 40 intermediate-care, 30 skilled-nursing units
Year completed: 1988

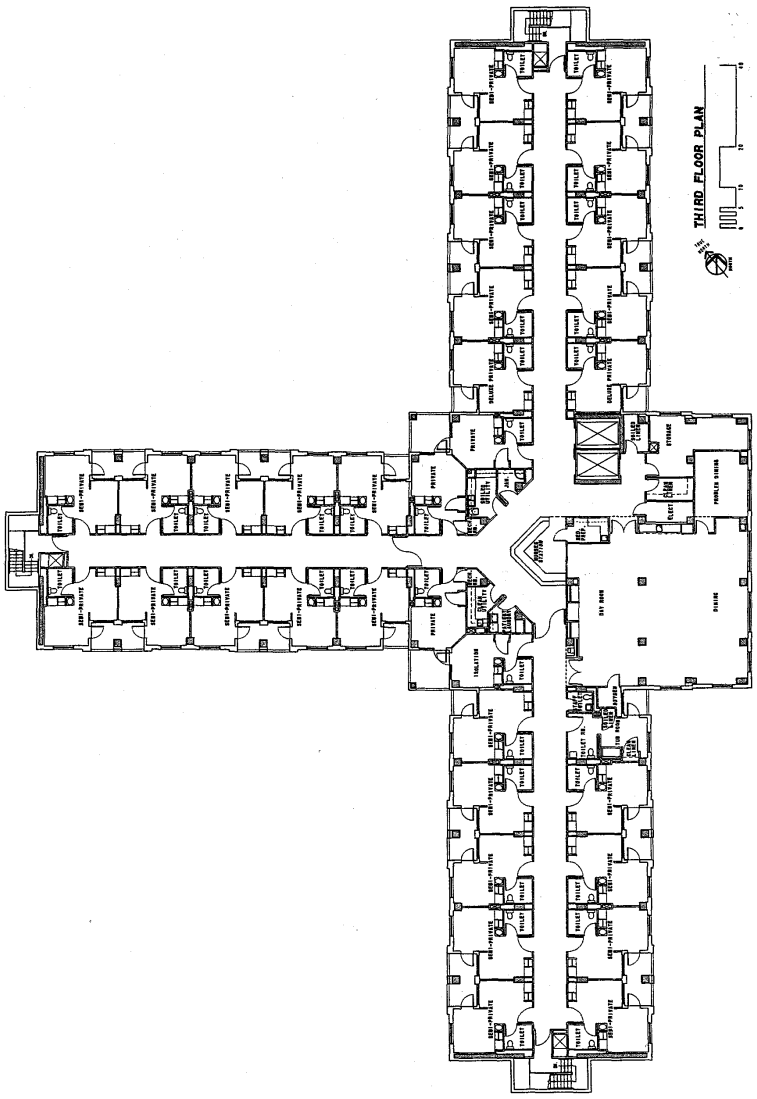
Located in a suburban setting in San Antonio, USAA provides the unique combination of low-rise building and high-rise towers. A three-story base with common space links a 20-story high-rise apartment complex and a three-story nursing center. The nursing center is composed of assisted-living, intermediate-care, and skilled-nursing units. A pedestrian street connects the USAA tower and nursing center. A sun-filled balcony on every USAA tower unit provides an excellent view for residents. The tower, which incorporates many new design concepts for the elderly living, has an upscale residential image in a user-friendly environment.



USAA



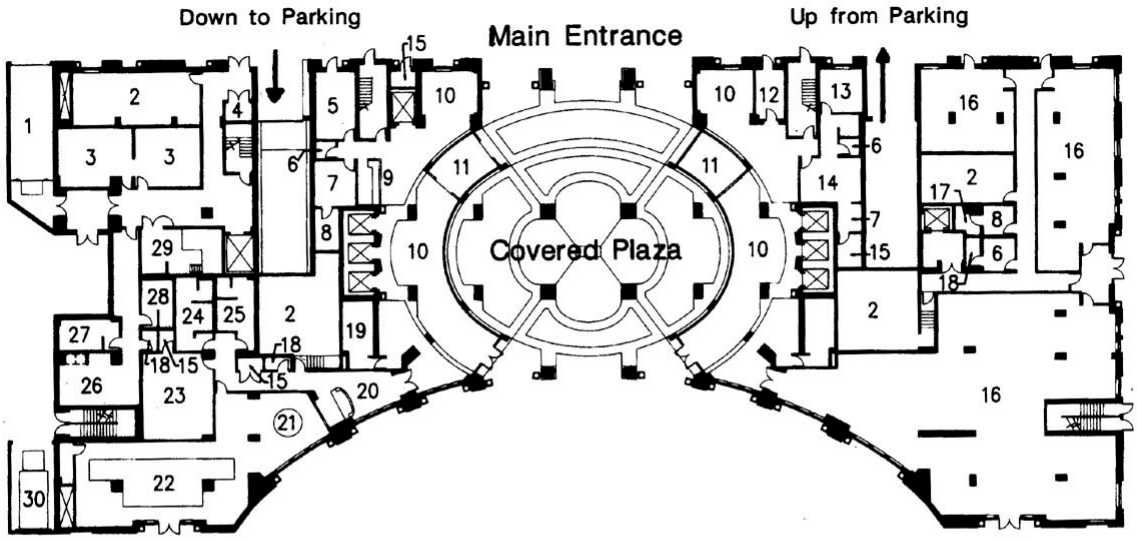
USAA



USAA

The Jefferson
Arlington, Va.
Site area: 1.46 acres
Area of building: 700,000 square feet
Capacity: 325 independent apartments, 39 assisted-living units, 31 nursing beds, 30 Alzheimer's beds
Year completed: 1992

The Jefferson, a representative urban high-rise continuing care retirement community, is designed for the elderly who prefer to live in urban areas. It is adapted to a tight urban site to maximize land efficiency. A four-story podium area--composed of common areas, assisted-living space, and nursing area--links the twin residential towers. Elevators segregate traffic by separately serving residential, nursing areas, and service areas. An elliptical plaza on the first floor provides safe outdoor access for residents and the public. The plaza has an upscale residential image in a "user-friendly" environment that employs many new design concepts for elderly living.



First Floor Plan

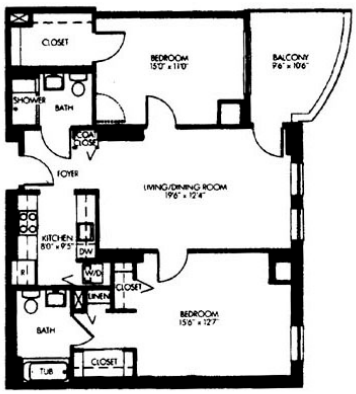
NORTH

0 5 15 35

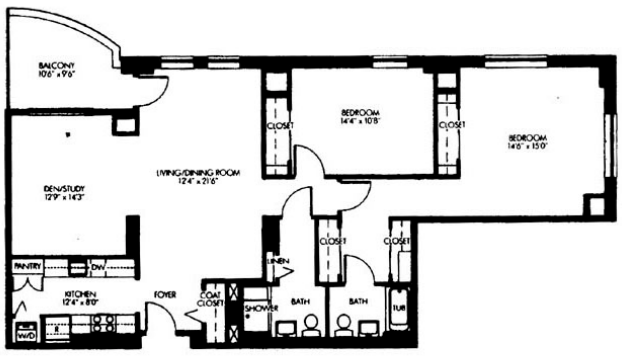
LEGEND:

1	LOADING DOCK	7	WORK ROOM	13	OFFICE	19	MAIL ROOM	25	MENS LOCKER
2	MECHANICAL	8	ELECTRICAL	14	SECRETARY/ DISPLAY	20	WAITING	26	EMPLOYEE LOUNGE
3	LAUNDRY	9	RECEPTION	15	STORAGE	21	JACUZZI	27	WOMENS CHANGING
4	HOLDING	10	LOBBY	16	RETAIL	22	POOL	28	MENS CHANGING
5	SECURITY	11	VESTIBULE	17	TRASH CHUTE	23	EXERCISE ROOM	29	TRASH ROOM
6	TOILET	12	FIRE CONTROL ROOM	18	JANITOR	24	WOMENS LOCKER	30	COMPACTOR

The Jefferson

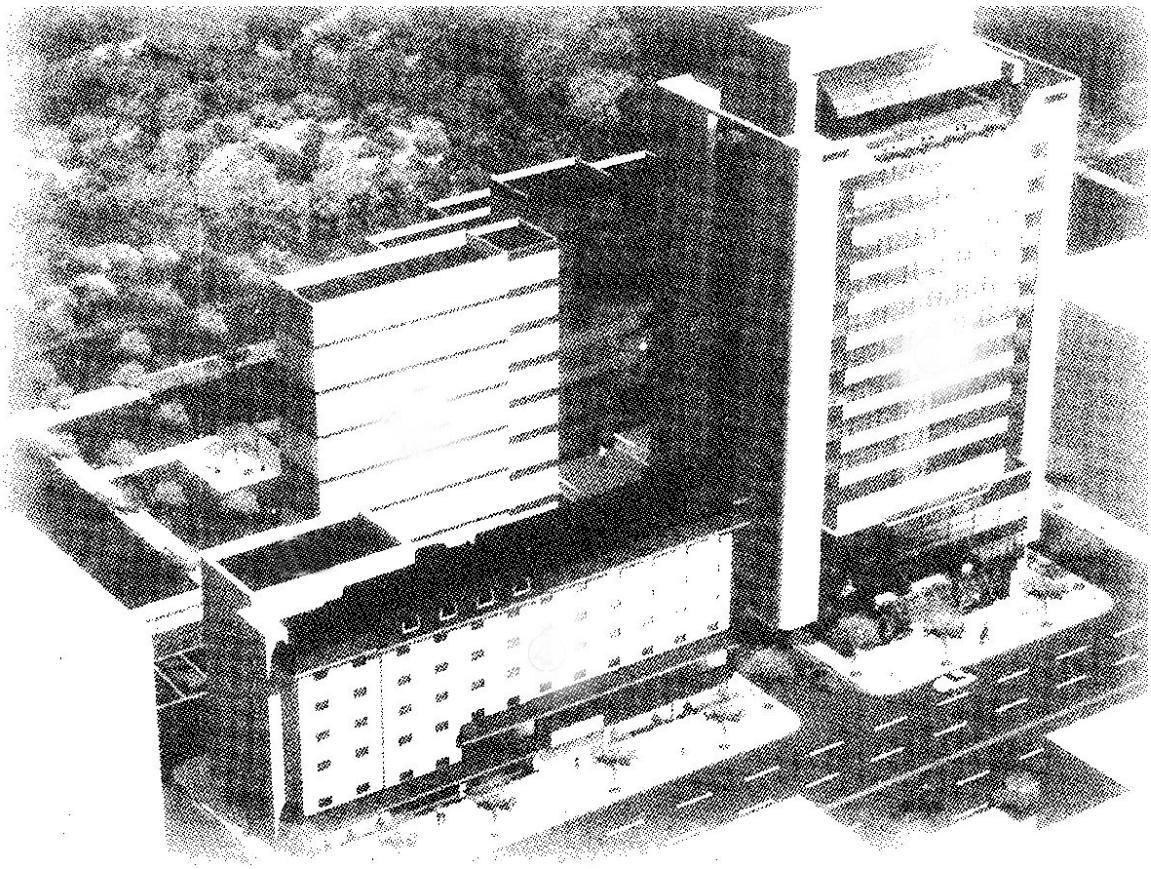


TWO BEDROOM



TWO BEDROOM WITH DEN

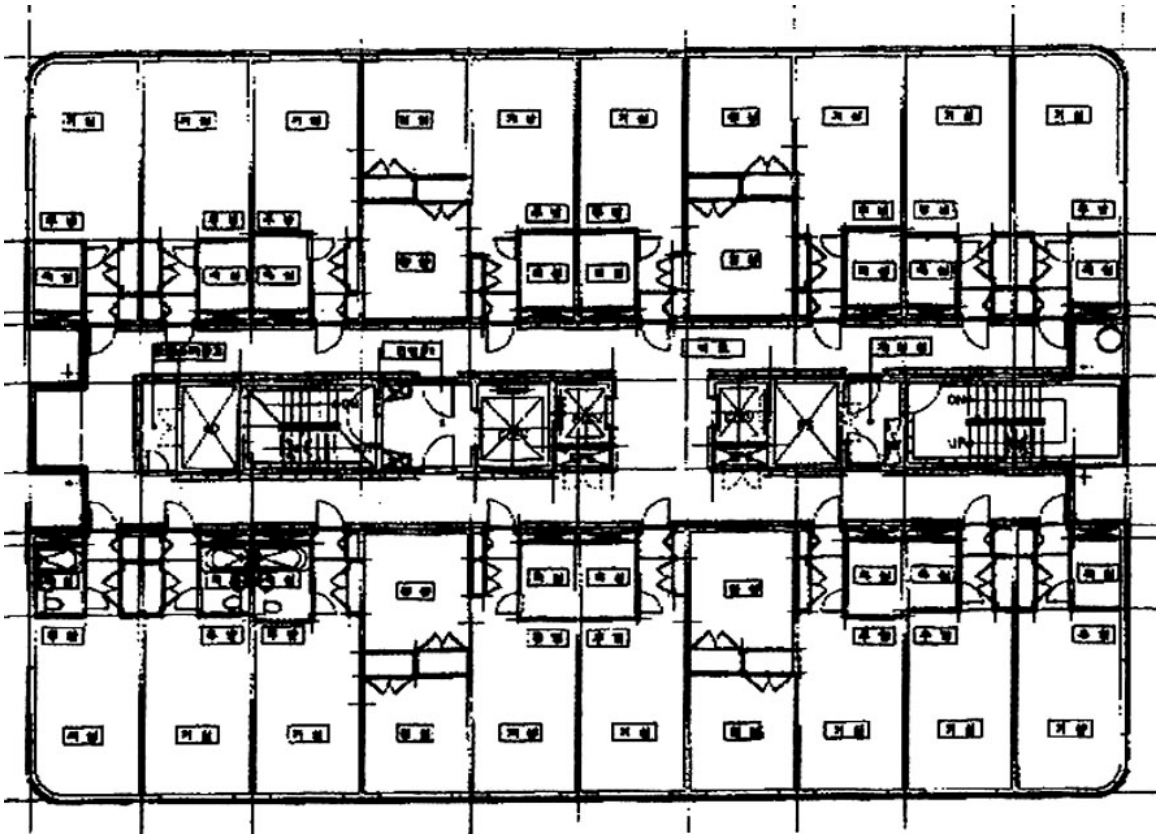
The Jefferson



The Jefferson

Seoul Seniors Tower
Seoul, Korea
Site area: 0.82 acres
Area of buildings: 206,066 square feet
Capacity: 104 independent living units
Year completed: 1998

Seoul Seniors Tower is an urban high-rise facility for the elderly. The lower tower floors house, common spaces, additional floors are residential areas, and the top floor is health-care space. An annex building, including a nursing home, parking tower, and hospital is located within the site. The building layout features interesting vertical and horizontal massing according to the functional needs. The residents have easy access to common and medical services. Also for the convenience of the residents, the facility offers easy access to adjacent community facilities for resident convenience.

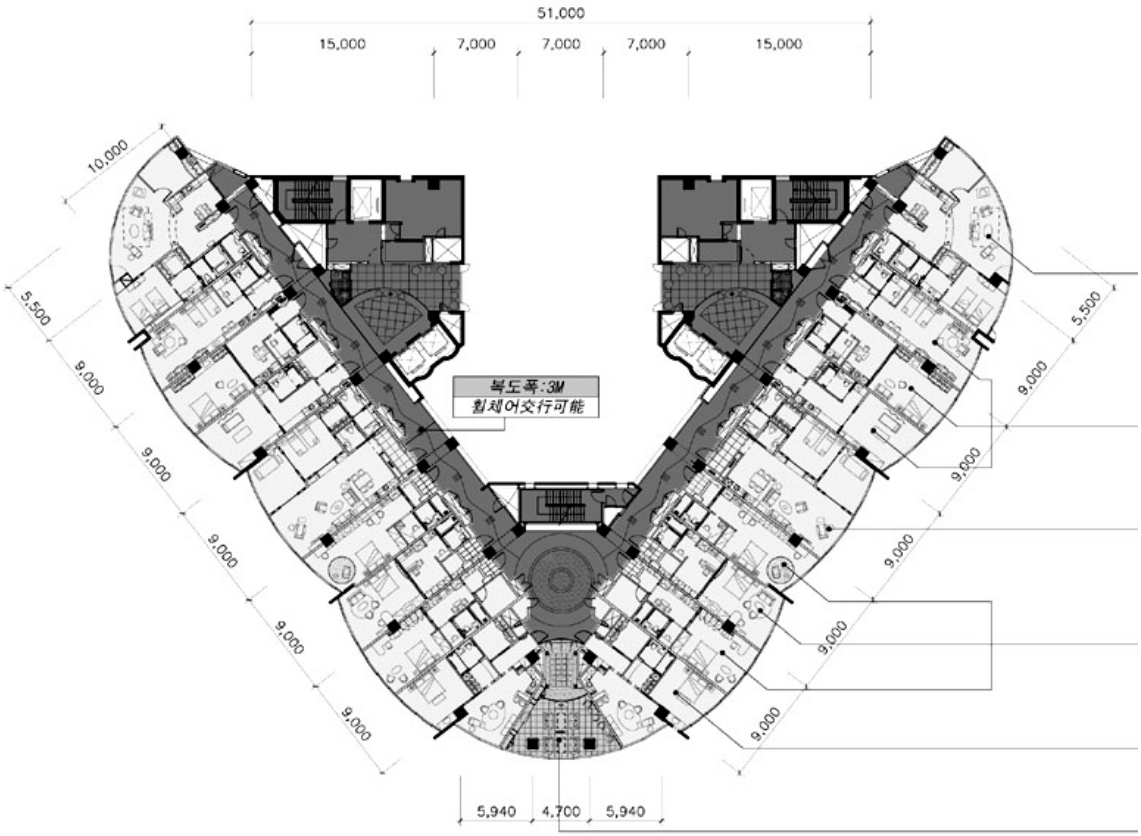


Seoul Seniors Tower

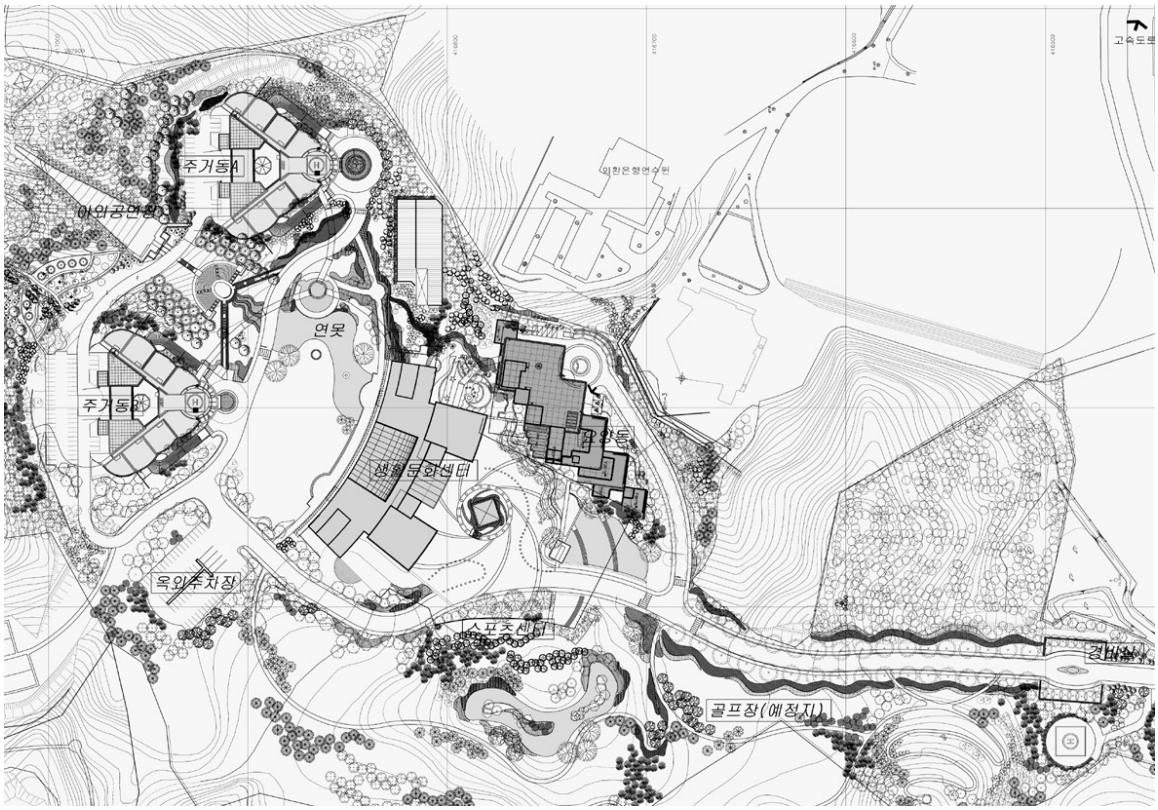
Seoul Seniors Tower

Noble County
Yong In, Korea
Site area: 43.86 acres
Area of building: 2,241,729 square feet
Capacity: residential tower with 590 living units, 16 guestrooms, nursing center, 191 units, life/culture center, and sports complex
Year completed: 2000

Noble County, which is near completion, will be the most luxurious continuing care retirement community in Korea. Located in suburban Yong In on the outskirts of Seoul, provides all types of community services and levels of health care. The facility is large enough to be a self-sufficient community within a site. It is composed of two 20-story residential towers, 6-story nursing home, 4-story life/culture center, and underground sports center. All of the components are easily accessible and beautifully blended with exterior spaces.



Noble County



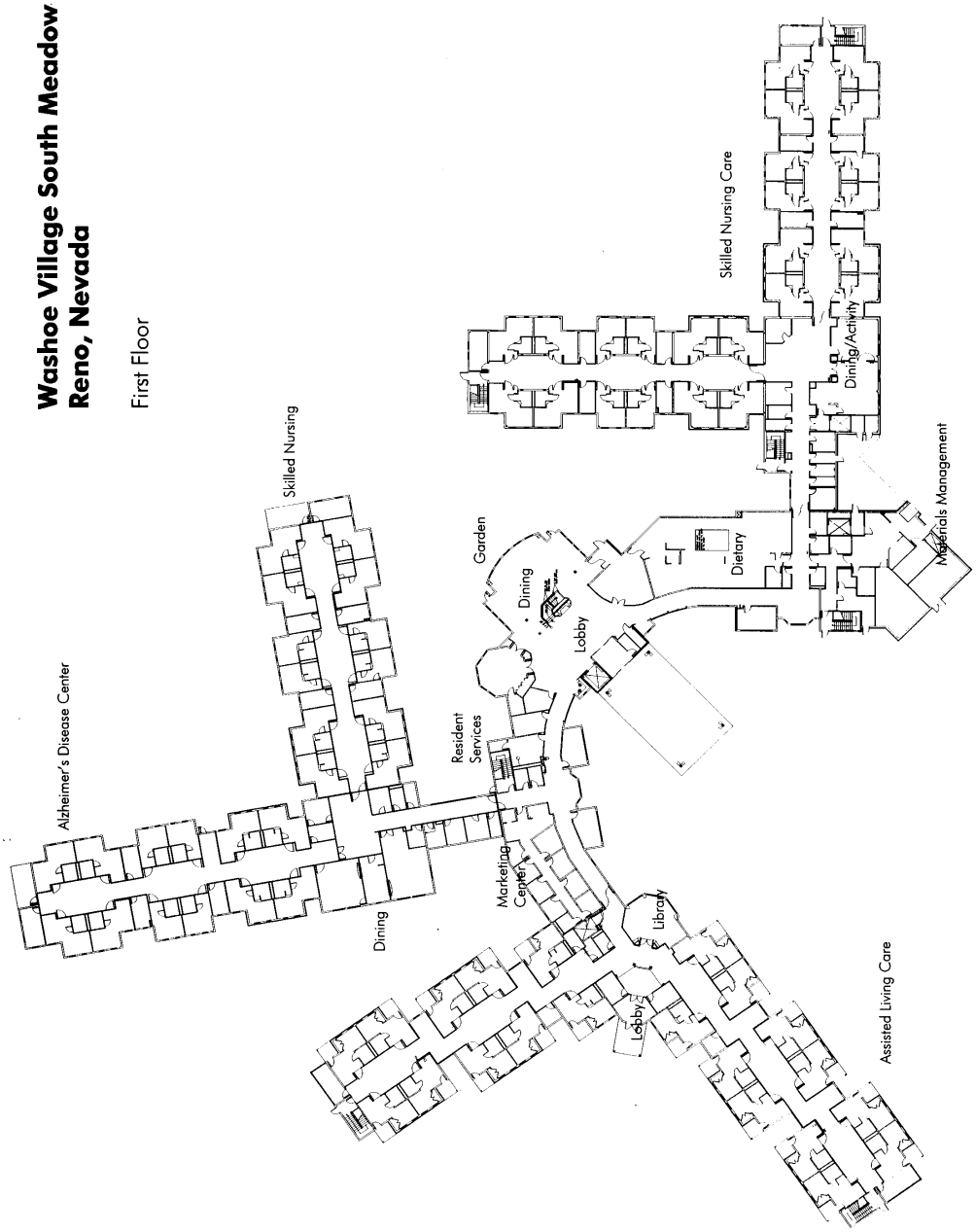
Noble County

Washoe Village Care Center
Reno
Site area: 26 acres
Area of building: 138,000 square feet
Capacity: 200-bed subacute, skilled, and assisted-living care facility
Year completed: 1999

Washoe Village Care Center is an example of a 21st-century post-acute care facility. The need for post-acute care facilities has created a new market niche for architects and interior designers. The 200-bed Washoe Retirement Center blends subacute, skilled nursing, and assisted-living care in a progressive new facility that serves as phase one of the South Meadows campus in Reno. The 138,000-square-foot two-story complex houses a commons building that acts as an anchor for the three types of post-acute care programs housed in three separate wings. The main entrance opens to a grand lobby in the commons building that serves as the village town square. Surrounding square are a concierge, general store, soda fountain, beauty shop, laundromat, and pre-function area.

Washoe Village Care Center

Washoe Village Care Center



Washoe Village Care Center

Conclusion

At some point, all of us will have an elderly family member who needs a long-term care facility, and selecting it is one of the most critical and difficult decisions that we must make. Designers have to place themselves in this role to best understand how to design the facility. The key challenge, as we begin the next century, is to design flexible, cost-effective facilities that successfully meet the needs of their residents.

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