

Human Design Factors for Senile Elderly Housing

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Abstract

This paper is intended to discuss some of human design factors based on the literature review & site-visits, and to suggest some reference information for the planning and design of senile elderly housing. Major discussing points consisted of dignity and privacy, homelikeness, social and psychological aspects, and cultural considerations. Conclusions can be summarized as followings; Dignity and privacy is a basic philosophy of elderly facility design. Bedroom, bathroom and toilet are to be designed with consideration for both resident's privacy and staff's observation. Homelikeness can be created through the design of every resident's personalized environment, form and character from the house, small-scale living unit, and residents' participation in domestic activities. In social and psychological aspect, the facility should be designed to encourage family involvement, distinct the spatial hierarchy, and install meaningful wandering path. For cultural considerations, the spaces for daily living need to be designed to reflect the traditional way of living such as Ondol in Korea and Dadami in Japan.

Keywords: Senile Elderly Housing, Human Design Factor, Planning and Design

1. Introduction

The population of elderly is significantly & rapidly growing in most Asian countries & facing the serious aging problems, and so increasing the demand of various elderly services. Proper countermeasures for care system & facility are urgently needed.

As the living environment strongly influences the behavior of senile elderly, well-designed physical environments can maintain the remaining functional ability and improve quality of life.

This paper is going to review the present situation and prospect of aging in China and some OECD countries such as USA, Australia, Japan & Korea, to discuss the human design factors based on the literature review & site-visits. And then some conclusions will be suggested for the reference of planning and design in senile elderly housing.

Major discussing points of human design factors are limited in dignity & privacy, homelikeness, social & psychological aspects, and cultural considerations even though there can be much more subjects like sensory items.

Mainly referred elderly facilities to have been visited are as followings;

- The Helen Bader Center, WI, USA
- Evergreen Health Center Creekview, WI, USA

- The Pines, NSW, Australia
- Sinnamon Village Park, Brisbane, Australia
- Komorebinoie(こもれびの家), Fukuoka, Japan
- Kazenomura(風の村), Chiba, Japan
- Noble County, Yongin, Korea
- Nursing home, Kimje, Korea

2. Present Situation and Prospect of Aging

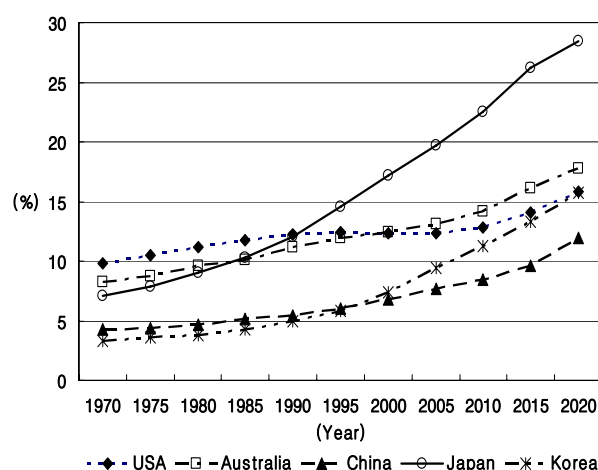


Fig. 1. Percentage of the population over age 65 (source: <http://esa.un.org/unpp/index.asp>)

As shown in Fig. 1, percentage of the aged(the population aged 65 or over) from 1970 to 2020 for China and 4 OECD countries will continue the rising trend. While USA and Australia have been slowly increasing in general, but somewhat settled in aging during 2000s, Japan, Korea and China have been rapidly increasing in percentage of the

aged.

Therefore, Japan, Korea & China seem to have a lot of new elderly housing to build in order to accommodate the rapidly growing demand, but USA and Australia may take priority over remodeling the existing facilities together with constructing new elderly housing.

3. Human Design Factors

3.1 Dignity and Privacy

The basic philosophy of elderly facility design is to recognize the intrinsic value of each person and his/her right to respect and dignity. Elderly facilities may increase the concerns in keeping with their efforts to treat each resident as an individual.

Private bedroom would be desirable rather than semi-private or multiple bedroom to keep the resident's privacy. Already, there are only private bedrooms in most American, Australian and Japanese new elderly housings. But Korean facilities still have both private and multiple bedrooms.

When the older residents were relocated to new institutional setting, they need not only some surveillances and assistances with activities of daily living but also privacy. The more observation is strengthened from the point of staff's view, the worse resident's privacy can be protected.



Fig. 2. Semitransparent window between bedroom and corridor, Komorebinoie, Japan

Usually resident's privacy is very hard to coexist with staff's observation. An idea to compromise between privacy and observation can be found in Japanese example(see Fig. 2). A semitransparent window is located between bedroom and corridor, and the resident has priority over opening the window from inside. Therefore, resident can keep privacy as much as possible and staff can recognize resident's movements in bedroom up to a certain.

Bathing can be regarded as an opportunity to exercise independence and preserve a sense of dignity. Both self bathroom and assisted bathroom

should be prepared respectively.

Toileting is normally considered as a very private activity. Toileting areas should be designed to be properly located, easily identified and used independently by the older residents. Toileting area needs to be close by each resident's bedroom, and so the residents can use the toilet frequently without assistance.

Usually there is a toilet in private bedroom in most American and Australian elderly housing. A toilet shared by two or three private bedrooms is shown in some Japanese ones. And a toilet in private bedrooms and common toilet for multiple bedrooms are general in Korean ones.

Common toilets placed liberally throughout a facility can reduce the time for the residents to visit. A large number of small common toilets located throughout the facility are more appropriate than a few large ones. In case of only small numbers, unisex toilet would be a solution.

3.2 Homelikeness

A true sense of home can be created through opportunities for residents to personalize one's environment and have some measure of control over its use. In fact, it is very difficult to realize homelike environments in large elderly housing.

To maintain more residential flavor, the large living & functional areas need to be subdivided into small-scale living units and the size of living unit should be as small as possible. As the living unit concept can reduce the scale to a more familiar size, similar to a home, it makes resident's life more manageable.



Fig. 3. Dining & kitchen, living unit, Kazenomura, Japan

Since size of living unit in referred facilities appears 6-12 persons, residents can easily be cognizant of every neighbor, can be very close like family, relative or friend, and also know the staff in charge(see Fig. 3). Similarly, staff can provide the residents with custom-made services as staff can comprehend the health condition and intimate needs

of every resident in detail.

To minimize the transfer shock of the elderly from home to institution, the form and character should be derived from the house. Staff works at a small desk in the kitchen or public dining room instead of a regular nursing station. Staff members need to wear casual clothes rather than uniform.



Fig. 4. Resident's helping with meal preparation, Komorebinoie, Japan

Various meaningful domestic activities in senile elderly housing can support remaining functional abilities and give pleasures to the residents. Many women residents feel at home helping with domestic activities such as meal preparation(see Fig. 4), washing the dishes, folding towels & personal laundry, and cleaning the rooms. The elderly facilities should be designed to encourage resident's participation in such domestic activities.

A physical design may encourage the residents to use familiar furnishings such as their own artworks, photographs, furniture and memorabilia.

3.3 Social and Psychological Aspects

Family Involvement

There are many possibilities of important roles which family members can play within the setting and a number of activities that can enhance the communication among the older residents, staffs and family members.

Family members can take part in the various informal/formal activities such as eating together, doing personal laundry together, reading books, volunteering in group activities, listening to music, and going on a picnic lunch(Victor A. Regnier, 1994).

Care partnership of sharing formal services and informal helps between families and staffs may have the potential to minimize barriers among formal providers, families, and older residents.

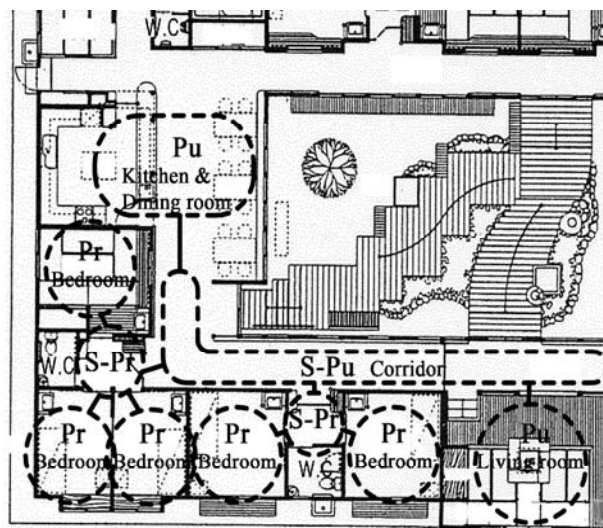
Extra bedrooms for family or guests are required for the family members who live far from the facility. And all the functional rooms should be

designed with the mind to encourage the family involvement.

Spatial Hierarchy

It is often both expensive and difficult to provide physical privacy, environments for the senile elderly should allow residents choices between solitude and participation in activities by providing a range of public to private spaces. Clearly defined boundaries between public and private spaces ensure that there is no ambiguity between shared and individual space(Uriel Cohen & Gerald D. Weisman, 1991)

In order to keep the residents' psychological comfort, distinctness of spatial hierarchy such as private, semi-private, semi-public, and public spaces in sequence would be very important. Some buffer areas like semi-private & semi-public areas should be located between private space and public space for the residents to prepare next action and avoid unexpected embarrassment.



Pr: Private, S-Pr: Semi-Private, S-Pu: Semi-Public, Pu: Public

Fig. 5. Spatial hierarchy, part of floor plan, Komorebinoie, Japan

For example, the concept of spatial hierarchy can be clearly seen to be properly realized in a Japanese elderly group home(see Fig. 5). Namely, resident bedroom(private area), anteroom(semi-private area), corridor(semi-public area), and dining room & living room(public area) are well organized. When a women resident usually gets up in the morning, she stays a little bit on the bench in anteroom, moves to dining room or living room through corridor. The anteroom & corridor between bedroom and living room(or dining room) works well as an intermediate spaces.

Meaningful Wandering

There are still some debates about the advantages and disadvantages of wandering path or measures.

With wandering path, it is apprehended that wander-prone residents may be exhausted due to restless walking. Without that, wanderers may have some possibilities of disorientation, psychologically upsetting other residents or accidents in staircase or outdoor pond.



Fig. 6. Exterior wandering path, Sinnamon Village Park, Australia

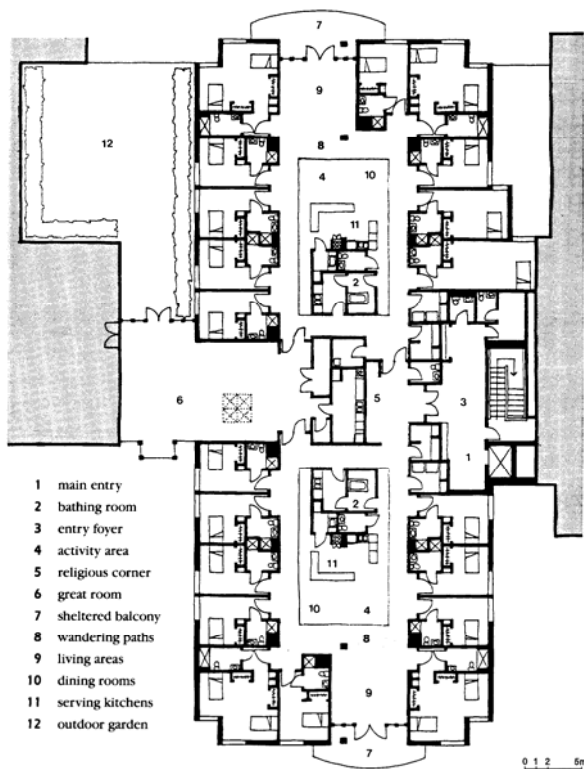


Fig. 7. Wandering path, floor plan, the Helen Bader Center, USA

Wandering is a relatively common and natural behavior of the elderly with dementia. Wanderers may leave the facility and easily lost. Wandering can be regarded as some expressed needs of the elderly. It can provide residents with stimulation and challenge and can be a meaningful activity, rather than boring repetitive behavior.

Physical settings that incorporate some measure of continuity and form a continuous loop are preferable to dead-end or interrupted paths, because dead-end paths may cause frustration and agitation (Uriel Cohen & Gerald D. Weisman, 1991). Simple wandering paths may be desirable to understand whether they are located in indoors or outdoors (see Fig. 6 & Fig. 7). Introducing public activity alcoves and memorable & unique landmarks along the way can provide residents with cues for orientation.

3.4 Cultural Considerations

Bedroom

There are both traditional and western style bedrooms together in Japanese and Korean elderly housing. Some residents prefer Dadami (Japanese floor mat) bedrooms in Japan and Ondol (Korean hot floor) bedrooms to western style bedrooms, because present older residents have lived in traditional bedroom at home for a long time.



Fig. 8. Residents enjoy talking with visitor on the Ondol corridor, nursing home, Korea



Fig. 9. Portable dining table, nursing home, Korea

Living & Dining Room

In some Korean facilities, especially in rural area,

residents enjoy talking in a seated posture on the Ondol corridor(see Fig. 8) or alcove, and sometimes like to have a meal on the portable dining table in a sitting position on Ondol than on a western style dinner table(see Fig. 9).



Fig. 10. Japanese traditional style living room, Komorebinoie, Japan

Japanese elderly facility usually has a traditional style living room(ざしき(座敷), see Fig. 10) where residents spend a lot of time, watching TV, taking a nap, enjoying tea, and talking each other. The living room has a fire pot which is hung from the ceiling & sitting on type square table. The floor finish consists of wood flooring and Dadami.

3. Conclusions

This paper is going to review the present situation and prospect of aging in China & 4 OECD countries, to discuss the human design factors based on the literature review & site-visits, and to suggest some reference information for the planning and design of senile elderly housing. Major discussing points consisted of dignity & privacy, homelikeness, social & psychological aspects, and cultural considerations. Conclusions can be summarized as followings;

Percentage of the aged(the population aged 65 or over) for USA, Australia, Japan, China and Korea will continue rising trend. While Japan, Korea & China seem to have a lot of new elderly housing to build in order to accommodate the rapidly growing future demand, USA and Australia may take priority over remodeling the existing facilities together with constructing new elderly housing to meet the gradually rising need.

Dignity and privacy is a basic philosophy of elderly facility design. Private bedroom is desirable to keep resident's privacy. Resident's privacy and staff's observation should be reconciled in elderly housing design. Bathing and toileting facilities are to be designed to preserve a sense of dignity and to be convenient.

Homelikeness can be created through every

resident individual's personalized and controllable environment. The form and character should be derived from the house. Living & functional areas need to be subdivided into small-scale living unit to keep residential flavor. The facility should be designed to encourage residents' participation in domestic activities for the feeling at home.

For social and psychological aspects, the facility should be designed to encourage family involvement in order to minimize the barriers among staff, residents and families. Distinctness of spatial hierarchy such as private, semi-private, semi-public and public in sequence is very important and to be realized in facility design. Wandering path needs to form a continuous loop with activity alcoves and some landmarks for orientation.

Cultural considerations for daily living are necessary for the elderly facility design because older residents are accustomed to traditional way of living. Ondol room in Korea and Dadami room in Japan can be considered to adopt together with western type rooms.

Further researches on more human design factors through various literature reviews & analyses of senile elderly housing by site-visits need to be continued. Especially, sensory factors such as lighting, color, texture, and sound should be included in further study.

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