

Universal Design of dwellings in Japan: Who are the assumed residents?

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S. Kose, Universal Design of dwellings: Who are the assumed residents? Gerontechnology 2006; 5(3):170-173. There is an old saying, "a man's home is his castle". The ideal condition would be that a person's dwelling should be suitable from 'cradle to grave'. However, many people are forced to leave their homes because of the deterioration of their capabilities, commonly due to the normal aging process. Adaptability of the dwelling to aging should be taken into consideration by the homeowner (Universal Design or UD). By Japanese legislature this UD for adaptability embraces at least (i) level floors without step differences, (ii) structural supports for installation of handrails or grab-bars, and (iii) adequate door openings and turning space to accommodate a wheelchair. It must be admitted that not all dwellings can be designed and built to be able to house everybody, because some type and level of disabilities require more extensive modifications than is readily available. But for most people, UD for adaptability suffices.

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The Japanese National Institute for Population Problems 1986 forecast, showed for Japan that the percentage of persons 65 years and older will reach the 25% level in 2014, and 36% in 2050 (*Figure 1*). The major reason of the drastic change is that females are having fewer children than originally expected. The Japanese government acknowledged this 1986 forecast as a warning signal. The aging of the society was such that it necessitated a radical change in thinking about design of the built environment. In response, the Ministry of Construction, from 1987 to 1991, conducted a research and development project, titled 'Development of technology to improve residential environments in an aging society'^{2,3}. The goal of the project was to develop strategies to encourage design of the built environment, specifically dwellings, to be both adaptable for the accommodation of seniors, as well as being attractive to the younger generation.

At the project's conclusion, draft guidelines were proposed for the design of dwellings for an aging society. In

1995 those guidelines were adopted by the Housing Bureau, Ministry of Construction. The following year the Ministry's recommendations were picked up by the Housing Loan Corporation (HLC) of Japan and incorporated into the government's housing loan schemes^{4,5}.

HOUSING PROVIDERS CHANGE STANDARDS

When HLC introduced in 1996 a new mortgage scheme of lower interest rates, it required that the design for (i) aging, (ii) energy consciousness, and (iii) high durability were in line with the government housing policy. All the major housing providers changed their design standards to meet the new requirements. Design for aging did not lead to any serious problems, but energy conscious design did. The simplest measure to meet the energy saving requirement was to prevent air from leaking, but it resulted in the so-called sick-house syndrome. To mitigate the problem, all dwellings are now legally required to have a 24-hour ventilation system, which is by no means ecological.

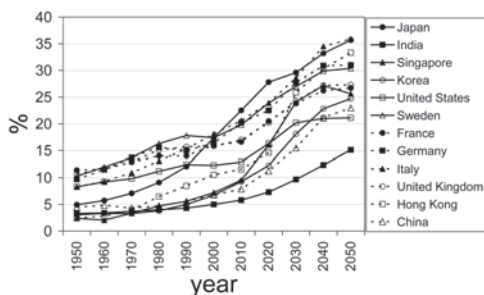


Figure 1. Comparison of several countries regarding the percentage of people aged 65 and over¹

To qualify for mortgages of a larger sum, the dwelling had to meet the regulation of lower interest rates. Japanese residents seemed to have begun to accept the concept of designing for ones' own future with regard to their dwellings.

The move was followed by the introduction of a housing performance indication system in 2000 that was based on the Housing Quality Assurance Law. This law ensured that better quality dwellings were built. Design for aging was included among the categories in the housing performance indication system⁷⁻⁹ and was divided into five levels, level 1 being just satisfying minimum requirements of the Building Standard Law, level 5 more prepared to care-giving in the dwellings. Although the performance indication system is not mandatory, it is gaining popularity because the trend is toward the purchase of homes to span a lifetime rather than moving from an apartment to a dwelling unit in multi-family housing, and subsequently to a detached house in the suburbs. People realize the value of keeping the property, and a higher housing quality is appreciated.

The monthly statistics over 2004 of new construction of dwellings show that around 3,500 units of detached houses versus 10,000 units of multi-family housing construction are obtaining the housing quality certificate. Half a million dwelling units of either type are built in Japan each year. So still the majority of newly built dwellings are without certificate. However, there is a tendency for constructors of multi-family housing to apply for certification.

A quality certification system for existing dwellings in addition to newly constructed ones was introduced in December 2002, but very few had applied for this certification by March 2004: 127 detached houses and 89 multi-family dwellings. This was partly because of cost versus benefit, and partly because of the potential risk of poorer quality to become evident, which would lead to lowering of the market value of the dwelling as a real estate property. In Japan, market value has generally been based on the location rather than quality of the dwelling itself.

SECURING SENIOR HOUSING

The Law on Securing Housing for Seniors was introduced in 2001, with the primary target to entice the private rental sector with economic incentives into the housing market. A revised version of the 'Design Guidelines Dwellings for the Aged' of 1995 was issued under the auspices of the Minister of Land, Infrastructure and Transport (formerly the Minister of Construction), while the 1995 version came from a lower level: the Director-General of the Housing Bureau.

Table 1: The percentage of dwellings that applied for the mortgage scheme of design for aging from the Housing Loan Corporation of Japan as compared to the total number of mortgages; The lower interest rate scheme was introduced in October 1996⁶

Design for aging mortgages	Fiscal year						
	1995	1996	1997	1998	1999	2000	2001
With lower interest rate	-	5.5	22.1	33.8	57.0	61.1	65.2
With larger sum of mortgage	2.5	5.2	12.1	22.2	50.5	53.1	57.1

The introduction of a new law toward securing housing for seniors was inevitable to accommodate all seniors who wanted to rent a dwelling in public sector housing, which was previously assumed to be the norm. The law introduced several economic benefits toward private rental housing provision, from subsidies for new construction, to assuring rental assistance to seniors with financial problems. Simply said, it was a change of emphasis from direct housing construction by the local governments to attracting private sector provision. Whether this will be effective or not is yet to be demonstrated because the construction of higher quality dwelling units targeted toward seniors would involve a large investment by the private sector. Existing dwelling units are generally of poor quality, and, too expensive to modify. The government may experience difficulties until good quality dwellings become a matter-of-fact. Private banks that provide housing mortgages will prefer higher quality dwellings as well, and this is expected to accelerate the trend towards design for aging.

LONG-TERM CARE INSURANCE

The insurance system covering all senior citizens in case of need was introduced in April 2000, by the Ministry of Health, Welfare and Labor. The insurance was designed to assist seniors to age-in-place rather than to accommodate them in nursing homes. Once an older person is certified to be in need of support due to frailty from aging, s/he is entitled to be supported in various ways, both physically and financially. The maximum amount of 200,000 yen, roughly US\$ 2,000, is provided to modify a dwelling. This is a 'once-in-a-lifetime' allocation. This amount will only pay for the installation of handrails or something of similar kind. The system does not allow for other effective home modifications to support seniors to continue to age-in-place.

This system does provide for quite a variety of assistive devices to be used (mostly rented) and is also generous in the provision for human-power assistance. The monthly cost to be covered for the assistive devices and human-power assistance is in the same order of the maximum allocation for home modification. It seems that the Finance Ministry (who has the authority to decide which costs to pay and which not) has a deeply-rooted belief that housing provision should be the responsibility of the individual and that assisting this with public money is a social injustice. This is rather a different view from the other countries' perception on housing where the consensus is that dwellings will last longer than the residents, and thus they are social assets rather than belongings of specified individuals. Up until recently, the average life of dwellings in Japan was said to be around 25 years, before they were demolished to be built again. This is a very short life compared to European and US housing. Fortunately, the situation is gradually changing.

ASSUMED RESIDENTS IN DWELLINGS

If aging-in-place is to be pursued, we must take into consideration that resident's capabilities can vary quite extensively. The official design guidelines of dwellings for the aged and the HLC housing mortgage requirements emphasized basically the following three: (i) level floors without step differences, (ii) structural supports for installation of handrails or grab-bars, and (iii) adequate door openings and turning space to accommodate a wheelchair. These are not enough if the resident should become frailer. However, experience shows that in most cases additional modifications can be done when those three conditions are provided in advance¹⁰.

Many of the difficulties encountered by the current frail seniors striving to be covered by the long-term care insurance system were due to their dwellings being very old and lacking the above three conditions¹¹. If these residents have, or develop severe disabilities, provisions to support their living in the dwellings (aging-in-place) will have to be extensive and in some cases need particular made-to-order solutions rather than generic. This is the case even if the dwellings are designed to match the aging of the residents. In many cases, however, the residents will be able to grow older without much problem¹².

In the global context, several facts are worth mentioning. In the UK (England and Wales), approved document Part M: Access and facilities for disabled people (1999 edition) requires that new residential construction has to be accessible and usable, including a bathroom on the ground floor. The visitability concept was originally introduced in the US (Atlanta, Georgia) in the late 1980s, and some local governments (US cities and counties) are trying to include the concept as requirements for new housing construction.

CONCLUSIONS

This paper has outlined the development to the present of the situation of dwelling design as the Japanese society grew older over the past twenty years. Some proportion of the aging population will need additional provisions as they get older and older, but current universal dwelling design is effective in coping with the societal change.

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