Notes on the Concept of Living-space in Japan

*TATAMI* (a thick mat flooring used in traditional Japanese rooms) represents the history of Japanese living-space itself, having direct interaction with the human body. At the beginning it was used as a furniture, later on it was spreading on the floor and was ultimately changed into a building component. “Half a mat for sitting position, one mat for sleeping position” is a Japanese common saying. The statement clearly indicates the minimum scale of the Japanese living-space. Till quite recently the one mat allotment was used in Zen temples.

Kamo-no-Chomei (1155-1216), who was a famous poet and writer in the Kamakura period, lived in *hozyo* late in his life. *Hozyo* is a 10 × 10 ft square wooden cottage, with floor area equal to 100 sq.ft., which is slightly smaller than the area of 6 mats. He described his own dwelling in detail, and further said that he had encountered several man-made or natural calamities over the years, and his first rebuild home was calculated at one thousand times more than the area of *hozyo*. And he also wrote that while people in general built their houses not only for themselves but for their families or servants, their friends, he built *hozyo* for himself. Moreover, he had no mind to permanently occupy the place and establish his house. This dwelling was constructed with fully prefabricated parts, so as to be dismantled and carried anywhere in two handcarts.

This essay was written in the early 13th century. Since then this concept has become the undercurrent meaning of the quality and quantity in Japanese living-space. The characteristics of the Japanese house can be described by the concept such as minimum area or temporal space. The most sophisticated space in the search for the minimum area is the *tyashitu* (tea ceremony house). Sen-no-Rikyu (1522-1591) reduced the area of the *tyashitu* to the size of 2 mats. He accomplished using the small interior space effectively by the effort of not perceiving the smallness of the room, which is designed with a small window or a side door (60 × 60 cm).

The inclination for the minimum space still survives in the tradition of the Japanese. *Hozyo* and *tyashitu* were occupied by a person or small groups as the place for formal activity during some span of time. Let us pay attention to the house as a space for a family.

The origin of man-made houses in Japan can be traced back to the Jomon period. The ruins of Mount Suwa in Saitama prefecture have 16 *tateana* houses and the area of 14 housing units is smaller than 100 sq.ft. Then area of the house was gradually increasing, in the case of the Toro ruins (Shizuoka prefecture) an area of the elongated circle plan was about 300 sq.ft., but the span of the four column was about 10 ft. The column space is nearly equal to *hozyo*.

The way of living in one multi-purpose room was succeeded from the *tateana* period on. In our present housing, the DK style can be traced to back to the traditional one. In this type of housing, all activities other than sleeping are performed in the DK living-
Letters to the Editors

Recently, a report from the European Community stated that “the Japanese live in rabbit-hutches.” These statements refer to the traditional Japanese way of living using minimum space and a multi-functional one room.

Cowan, P. (Studies in the Growth, Change and Aging of Buildings, 1962) listed as many human activities as possible, starting with the five senses, ranging up to large group activities such as dances and conferences, and counted the number of activities that can be accomplished in various areas of floor space. The data showed that the number of activities amount to 40 in areas of 100–150 sq.ft., at which point the curve of activities levels off abruptly. He then concluded that it is quite reasonable to suppose that rooms of 150 sq.ft. will serve a very large proportion of human needs. And he pointed out that in Apollo, the U.S. space capsule, which is designed to accommodate four men on a long journey, the main crew cabin, about 100 to 120 sq.ft., provides an environment in which a very large number of human activities are possible.

Judging from these studies, hozyo area holds much possibility for adaptability to various human activities. In spite of these facts, the smallness of Japanese houses cannot be denied. Areas which was demonstrated by Cowan cannot include those activities simultaneously. On the contrary, in a living-space several activities of some groups occur simultaneously. If the area is limited, one of group will be forced to stop their activity and to join other group.

To prevent an activity of a group or person from interfering with the activities of other, we enclose one activity by a wall, that is to say, one room for one activity. This is a typical method of modern planning in architecture. But both in the West and the East, this method result in a waste of space resources, an excess of the number of rooms, and the lack of unity as a whole. So it is the most urgent theme in the behavioral research to estimate optimum areas where several activities are able to coexist simultaneously.

Japanese have been accustomed to performing various activities one by one in a small room. So under conditions where individuals or several groups must conduct activities separately in a room, even if the space is enough, separate activities have some interaction, and individuals hesitate to do something. Consequently, the activity of a leading group will prevail against the rest, or individuals will become one of a crowd and behave separately as in a crowded commuter train.

This is not only because Japanese have learned to adapt to restricted areas, but because their sitting posture on tatami restricts the mobility of activity. From now on in various architectural spaces open-space will increase where different groups or persons can conduct themselves simultaneously. This is an inevitable tendency to economize on the resources of architectural space, and to open “tight” rooms in buildings. Otherwise vacant spaces occupied temporarily by a specific group will prevail and whole of a building will be composed of waste spaces. It is necessary to harmonize the traditional concept of the living-space in Japan with the multi-adaptable space.

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