The cage defines an in-between space that bounds the house on all sides. The attached screens are each separately adjustable, all closed or opened in any combination. The screens can thus act alternately as roof, awning, or wall. And as with the Indian porch, the tempo of life in the boundary is set by the recurring changes of climate.

The Japanese House

The *minka*, or traditional house of feudal Japan, is perhaps the most complete example of adaptive transformation. While Paul Rudolph's Florida guesthouse adjusts mainly at the boundaries to weather and climate, the minka adjusts as well from the inside. Teiji Itoh, historian of architecture and city planning, points out that the construction of the minka falls into two main design systems: one fixed and the other movable.[10]

Fixed elements of the minka include a supporting wooden frame and nonsupporting stonewalls. The frame is a post-and-beam system, *jikugumi*, supporting a roof pitched to shed rain. The space below is free to accommodate whatever use the occasion may demand of it. Other permanent elements, such as stone walls designed as wind breaks, and plastered walls and panels, play no part in supporting the roof. Itoh explains: "Because of the frequency of strong earthquakes and the need for circulation of air during the hot, humid summers, load-bearing walls were of little use."[11]

Movable elements of construction that bear no load comprise the *zosaku*, the "fixtures"—the sills, head jambs, rails, walls, windows, sliding partitions, *tokonoma* (decorative alcove), and shelves—all of which define changing spaces within the structural framework. Itoh continues: "The elements comprising the zosaku involve a nailess joint system that allows them to be assembled and disassembled with ease in order to vary the spaces within the structural framework according to the desires of the occupant."[12]

The flexibility of the zosaku system becomes especially evident in the use of sliding doors of two types: the translucent *shoji* that separate indoors from outdoors, and the opaque *fusuma* that serve as interior partitions. Itoh clarifies: "These are alternately installed and removed to meet the tastes of the family as well as ceremonial and seasonal needs. For example, just as the Japanese change the hanging scroll in the tokonoma according to the season, so they also change the shoji and fusuma."[13]

Seasonally moving the sliding doors corresponds with transforming space and the changing patterns of family life. In winter, space contracts and vistas foreshorten. The shoji are closed to the blustering winds while admitting subdued light. Within the house, the fusuma are used to subdivide space into rooms of "myriad shapes" where the family draws together. Since there is no central heating system in the minka, the family share warmth from their collected bodies and, at meal times, they also share the heat from a brazier under the low table. The family can take the opportunity to give news of the day, of work and school, of successes and failures.

In summer, space expands and vistas elongate, even out to the garden. Fusuma are adjusted or entirely removed to open and unify interior space. Without the exterior enclosing shoji, light enters directly and cooling breezes sweep through, setting into motion the entire house. Lacking the wintertime need to gather in small rooms for comfort, family members are free to spread out. In the open space, they hold contact with one another, maintaining awareness of each other's being there. With the passing season and the transformation of space, family life is made over as well.

The Two Types of Sliding Doors in a Traditional Japanese House: (Top) the opaque *fusuma* that serve as interior partitions; (Bottom) the translucent *shoji* that separate indoors from outdoors. The doors slide back and forth in matching tracks mounted above on the beams and below on the floors or they can be removed completely and stored, all in response to seasons or family needs. (Photographs by Yukio Futagawa in *The Essential Japanese House* by Futagawa and Itoh. Chapter 10, plate 6, and Chapter 4, plate 21.)

House Cleaning

Seasonal adjustments of a house do not always occur so dramatically as with the foregoing examples; a house is also transformed and can take on new meaning when people clean, paint, hang cur-