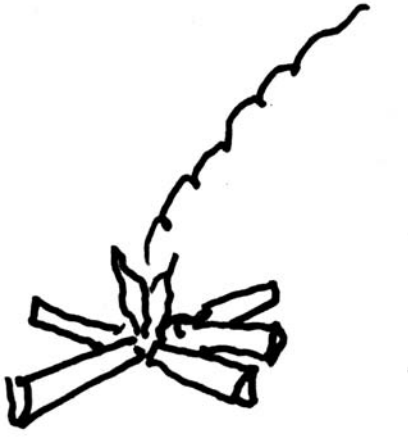
4 Metabolism



Metabolism, a third adjustment to nature's rhythms, depends on the chemical and mechanical conversion of energy. From earliest times, people gathered around fires or huddled to share body heat. Then they learned to bring fire inside the house, first heating only one space where people gathered around a central hearth under the roof and later heating separate rooms with fireplaces and chimneys. Only in its latest mechanical forms of heating and cooling have we become particularly dependent on metabolism, nearly to the exclusion of traditional adaptive modes that once spoke of life in different places. With this almost universal reliance on the same means of interior climate control have come powerful consequences for the world environment, for architecture, and for the ritual use of space.

A Bit of History

With few exceptions such as the radiant heating systems of ancient Rome, occupancy and open fires remained the only metabolic means until the 11th century. Then, medieval advances from central fires under a vent in the roof to mantled chimneys built into the walls of individual rooms brought both health and social change. This change brought lords and ladies out of their common halls, where all had once eaten together and gathered for warmth. Class divisions deepened as owners and their retainers lived more separately from each other. "No other invention brought more progress in comfort and refinement, although at the cost of a widened social gulf."[1]

Not until the 19th century did central heating and mechanical ventilation begin to develop in their modern forms.[2] Rapid conversion to mechanical systems occurred first in the hospitals and