> physiography, then the water regimen becomes comprehensible—the pattern of rivers and aquifers, their physical properties and relative abundance, oscillation between flood and drought. Knowing the foregoing and the prior history of plant evolution, we can now comprehend the nature and pattern of soils. . . . By identifying physiographic, climatic zones and soils, we can perceive order and predictability in the distribution of constituent plant communities. Animals are fundamentally plant related so that given the preceding information, with the addition of the stage of succession of the plant communities and their age, it is possible both to understand and to predict the species, abundance or scarcity of wild animal populations.[25]

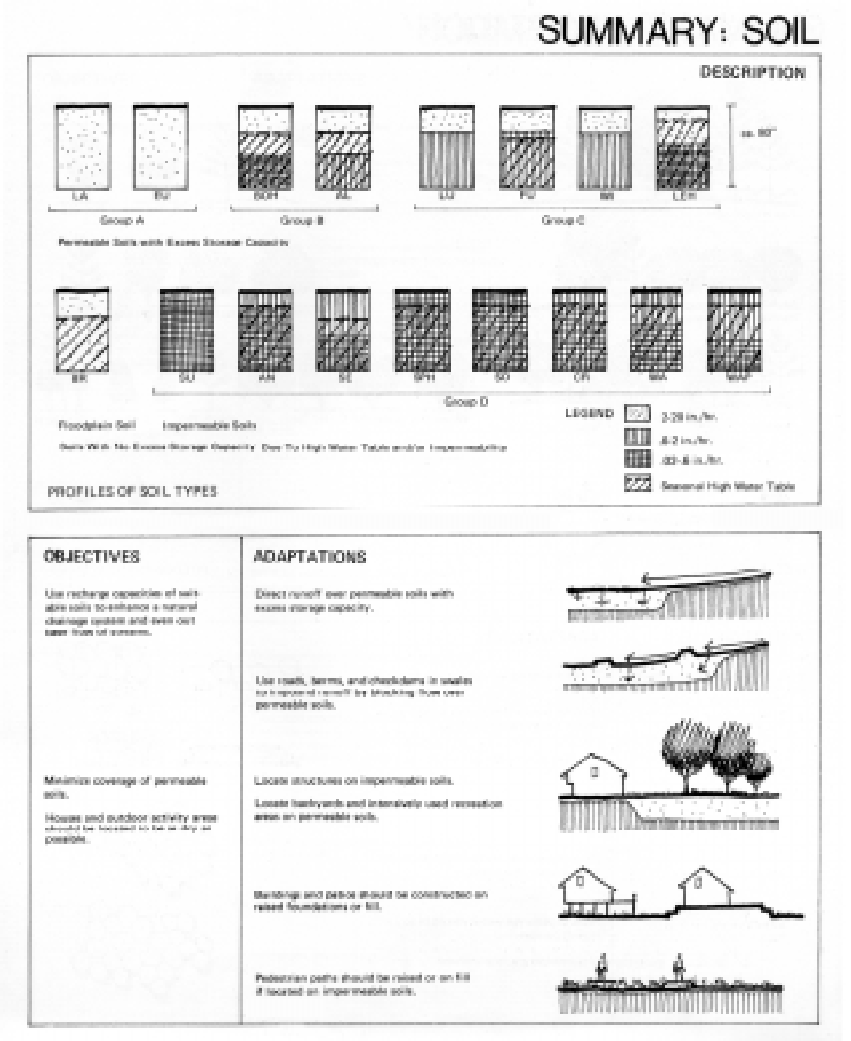
The inventory McHarg advocated and insisted upon in his teaching and professional projects "as a prerequisite for intelligent intervention and adaptation" has been attacked by some landscape architects for according too much weight to the insights of science as opposed to intuition. Others have criticized, even ridiculed, it for being unnecessarily comprehensive and too elaborate and expensive to undertake in most professional projects.[26] While these critics have a point, they lose sight of the most important aspects of the ecological inventory—its systematic comprehensiveness and the relation of different aspects of the environment. Such an inventory, applied consistently, is like the use of diagnostic gamuts in medicine, whereby the doctor is reminded, in examining patients and considering their symptoms, to check all their systems. The ecological inventory is also a diagnostic tool, a checklist of interrelated systems. In McHarg's practice, the inventory was adapted to the particular situation. It was used not only to understand how a place came to be, but also to identify problems and opportunities that might otherwise be missed and to focus not merely on what a landscape looks like but also how it functions and how it is evolving. In many instances, McHarg's systematic inventory of natural features and processes revealed important issues of which the client was unaware.

An ecological inventory by McHarg's firm, WMRT, for the site of Woodlands New Community, north of Houston, Texas, in the early 1970s, identified flooding, storm drainage, and groundwater recharge as overriding issues. The client wanted to build a new town in the midst of a pine and oak forest, but the site's soil and groundwater conditions were such that a conventional drainage system would have lowered the water table and destroyed the forest. It would also have caused flooding downstream and led to ground subsidence beneath Houston. These regional effects, in particular, would not have been identified with a less comprehensive approach to studying the site. McHarg and the staff at WMRT proposed a "natural drainage system" that would enhance groundwater recharge, abate flooding, protect water quality, and sustain the forest.[27] This innovative solution emerged from

[25] McHarg, "An Ecological Method for Landscape Architecture," 105–7.

[26] Carl Steinitz, in the course he taught at Harvard in the late 1970s and early 1980s, Methods in Landscape Architecture, often presented the most excessively detailed of McHarg's inventories for this criticism.

[27] See Ian McHarg and Jonathon Sutton, "Ecological Plumbing for the Texas Coastal Plain," *Landscape Architecture* 65, no. 1 (January 1975): 78–89; Anne Whiston Spirn, *Woodlands New Community: Guidelines for Site Planning* (Philadelphia: Wallace McHarg Roberts and Todd, 1973).



7. Design recommendations linking goals and implementation were termed "adaptive strategies." (from Anne Whiston Spirn, Woodlands New Community: Guidelines for Site Planning *[Philadelphia: Wallace McHarg Roberts and Todd, 1973])*

the situation of practice—the environmental challenges posed by the site, the pragmatic demands imposed by the client, and the values, theories, and methods of the landscape architects.

The plan for Woodlands provided the opportunity to link analysis and practice, planning and design, regional and local scales: to work from an ecological inventory of the eighteen-thousand-acre site, to a plan for the new town for 150,000 people, to devising strategies for its implementation in design (Fig. 7). Woodlands exemplifies McHarg's idea that planning and design are a tool of human evolution; WMRT staff invoke the language of evolution (e.g., "fit" and "adaptation") deliberately. Design recommendations linking goals