1. BEGINNINGS

This book is about an idea. We call this idea the integral urban house. The idea is not original with us, but its physical actualization has become an urgent concern of ours over the last several years. An example of an Integral Urban House exists in Berkeley, California (throughout this book the capitalized title Integral Urban House refers to the house in Berkeley, while the lowercased words refer to the concept of an integral urban house), as a demonstration project of the Farallones Institute, a nonprofit educational and research organization with administrative offices in Berkeley, California. Other examples are the Ouroborus House in Minneapolis, the East Eleventh Street project in New York City, and the Office of the Institute for Self-Reliance in Washington, D.C. Many similar projects are being developed throughout the United States as well as in other countries.

Many people participated in the realization of the Integral Urban House in Berkeley. Some were founders of the institute along with us, providing the original support that made the project possible. Others were dedicated designers, builders, educators, urban farmers, students, and helpers who provided the many skills needed to create and experiment with the systems developed.

This Integral Urban House project in Berkeley is open to the public for casual visits and to students for critical examination. Hopefully, it serves as an inspiration and catalyst for new ideas on how to implement the primary goal: the creation of a self-reliant urban household, an urban residence that helps to support its residents while they support it. This house integrates the life-support systems of its residents in such a manner as to conserve energy and resources and provide a healthy environment in which humans may survive and thrive.

However, this book is not solely about the Integral Urban House we helped to create, because that is only one example of the idea. Indeed, we learned so much in the process of developing this one that we will surely do some things quite differently in the integral urban houses we help to realize in the future. Therefore, we shall be considering the idea in its broadest sense, drawing examples from other such efforts with which we are familiar,

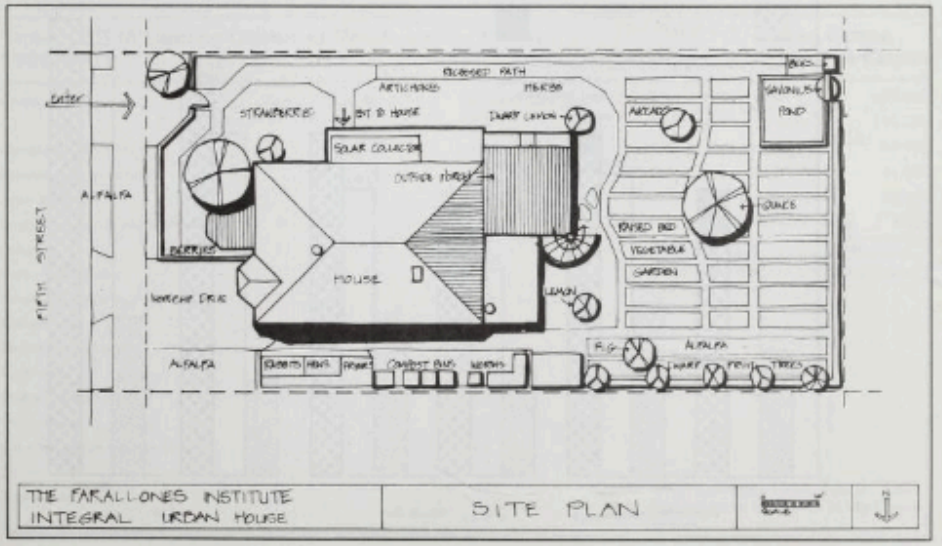
and giving details regarding those specific aspects with which we have had first-hand experience. We have no intention of implying that ours are the only available or suitable approaches to reaching the same goal.

The Integral Urban House as an Idea: The idea of the integral urban house arose from our felt need to elaborate a model life-support system that large numbers of people could use preparing for their future while simultaneously improving their daily life. Forecasting the future is usually a value-laden process in which, simply speaking, one documents past activities, events, and changes, and then, on the assumption that the same basic processes will continue to operate, projects the perceived patterns into the future. Clearly, certain worldwide patterns will not change radically in the immediate future. These include widespread social inequalities and continued population growth and their attendants—famine, poverty, disease, and human conflict.

Against this somber prophecy we propose that people need to feel that they have some control over their own lives in order to come together in constructive groups to reform their communities. And they need to believe in their own ability to create and maintain their basic life-support systems in order to feel at least somewhat in control. To use a metaphor for our automobile-addicted culture, we need to feel that we are in the driver's seat rather than merely passengers in our own lives.

Nowhere is the sense of victimization greater than among those of us who live in urban areas or who, though living in a rural setting, have adopted urban (nonagricultural) lifestyles. If you fall into one of these cate-

Figure 1-1. **The Integral Urban House, Site Plan**

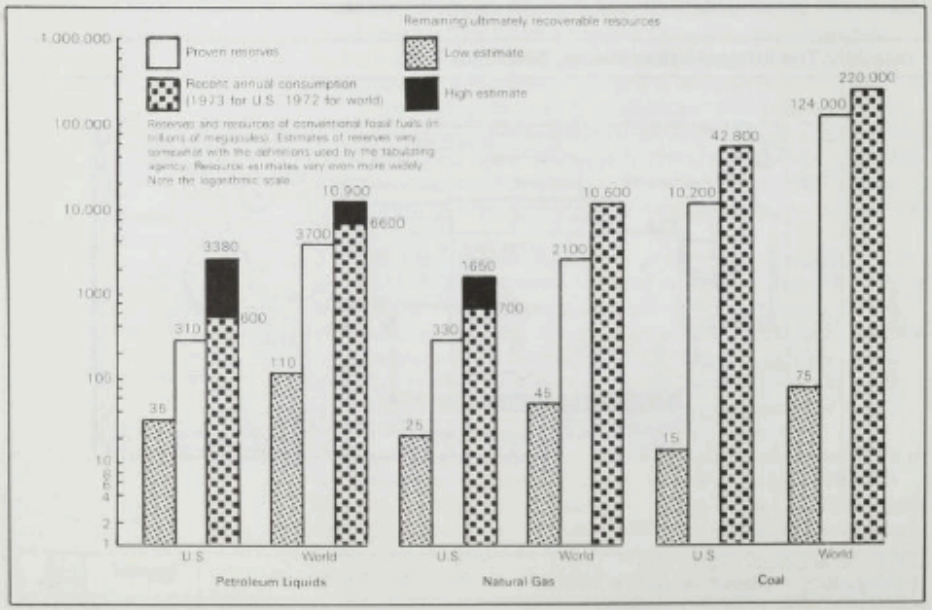


gories, what will you do when a transit strike closes your local grocery store, when there is no more gasoline at the local service station, no natural gas in the pipes to the furnace or heater, and so on? What are you doing as food, gasoline, electricity, and natural gas prices rise and water becomes scarce? How will you react as an increasingly large number of your acquaintances die from various types of cancers that experts now agree are in large measure caused by toxic materials in the environment? Ironically enough, the majority of these chemical compounds result from activities that are said to make our lifestyles possible. Table 1-1 shows how the mortality patterns have changed in the United States. Where we once died from infectious diseases we now are subject to degenerative diseases triggered by the stress of modern urban lifestyle, diet, and exposure to toxic materials. Table 1-2 is presented to give some perspective on the mortality figures in Table 1-1.

We do not think the solution to environmental crises is self-sufficiency, because such a condition is not possible even if it were desirable. If self-sufficient human communities exist at all, they are extremely rare. One might argue that no such community ever existed by interpreting "self-sufficient" to mean independent of other humans. Can an isolated Brazilian jungle tribe be considered self-sufficient when it is showered with radioactive fallout from nuclear tests conducted by major world political powers thousands of miles away? Tribespeople might protect themselves from poisonous snakes but not from, for example, increased ultraviolet radiation at

Source: Ehrlich, Ehrlich, and Holdren, *Ecoscience: Population, Resources, Environment.*

Figure 1-2 **Perspectives on World Fuel Reserves**



the earth's surface due to depletion of the ozone layers in the upper atmosphere, or large-scale weather modifications inadvertently caused by human activities on other continents.

In spite of the awesome interdependence of all humans, a large number of us, including the most apartment-constrained inner-city resident, can cultivate a measure of self-reliance, or what was once referred to as "Yankee ingenuity." We can learn to use what resources we already have right where we are to keep ourselves warm in winter; raise some of our own food on rooftops, porches, patios, backyards, and community gardens; obtain some of the nonhuman energy we need from nonpolluting sources; recycle and compost our wastes through homesite and neighborhood centers; and repair and maintain our own habitat (in spite of its capricious-seeming intention to pursue the laws of thermodynamics and lapse into disorder).

Five basic needs define our basic life-support systems (see margin). When they are not met it becomes difficult to maintain the simplest human interactions, much less engage in social reform or create works of technology or art that manifest culture. When you are unhealthy it literally costs more to support your life.

As our homes are now structured, satisfying most of these basic life-support needs requires that we be dependent on resources originating far away. We consume vast amounts of nonrenewable or, worse yet, dangerous forms of energy in the process of bringing these resources to ourselves and then carting away our wastes. Though we eat California lettuce and Mexican tomatoes in New York, we become vulnerable to the vagaries of complex distribution systems that are subject not only to human error but also to all the political and social pressures of the times.

Our schools did not teach us such simple things as how to manage flies

A first step toward self-reliance is to list our most basic needs

1. Food that provides us with sufficient calories or energy, and a balanced nutrition for our bodies to carry on normal metabolic processes as well as to resist invasion by pathogens or assaults by toxicants
2. Uncontaminated water to drink and clean air to breathe
3. A method of managing our own wastes so they do not create conditions that impair our health
4. Protection from the extremes of weather
5. Freedom from pests and pestilence

Table 1-1 **Ten Leading Causes of Death, United States: 1900, 1970**

Cause	*Rank 1900*	*Rank 1970*	*Percent of Total Deaths 1900*	*Percent of Total Deaths 1970*
Accidents (non-vehicular)	6	5	4.5	3.1
Accidents, motor vehicle		6		2.8
Arteriosclerosis		9		1.7
Brights disease (chronic nephritis)	5		4.7	
Cancer	9	2	3.7	17.2
Cirrhosis of the liver		10		1.6
Congestion and brain hemorrhage	7		4.2	
Diabetes		8		2.0
Diarrhea and enteritis	3		8.1	
Diphtheria	10		2.3	
Diseases of early infancy	8	7	4.2	2.3
Heart disease	4	1	8.0	38.2
Influenza/pneumonia/bronchitis	1	4	14.4	3.6
Stroke		3		10.8
Tuberculosis	2		11.3	
			65.4%	**83.3%**

Source: Adapted from Omran, "Epidemiological transition in the United States."

Table 1-2 **United States Deaths from Various Causes**

Cancer deaths (1969)	323,000
World War II battle deaths	292,000
Auto accident deaths (1969)	59,600
Vietnam war deaths (six years)	41,000
Korean war deaths (three years)	34,000
Polio deaths (1952, worst year)	3,300

Source: Epstein, "Potential Carcinogenic Hazards Due to Contaminated Drinking Water."

and cockroaches without poisoning ourselves, process our own manure safely without using up gallons of pure water and the energy needed to pump it to us, use the sun and wind to create heat, light, and the energy to run machinery. Few of us learned the other simple home-scale technologies that are appropriate to the resources and climate of the regions we live in. Most of us grew up believing that improving the quality of our lives over that of our pioneer ancestors requires completely giving up a sense of self-reliance in the home to become totally dependent on energy sources far away and controlled by powerful international corporations almost entirely beyond the influence of the communities they serve.

Yet it is possible to construct, or renovate, a house so that it does an excellent job of protecting its residents from the weather with very little addition of energy from somewhere else. (Recent studies by the Federal Department of Energy suggest that houses built as passive solar systems could furnish 99.9 percent of the heat needed in a Los Angeles residence, 60 percent in New York, 57 percent in Boston, 52 percent in Seattle, and 42 percent in Madison, Wisconsin.) Similarly, process one's own household organic wastes in a space three by eight feet, and use the product to raise tomatoes or other vegetables in a five-gallon can. Water for drinking can be obtained from contaminated water through the use of a solar still. To some

Table 1-3 **Energy Used in Construction***

Materials	*Units*	*Btu/Unit*
Framing lumber (rough)	Board feet (bd ft)	7611
Glass, double strength sheet	Square feet	18,430
Ready-mix concrete	Cubic yards	2,594,338
Paint (oil and alkyd)	Gallons	488,528
Asphalt roofing shingles	Square feet	25,334
Steel, hot rolled structural	Pounds	18,730
Aluminum, rolled structural	Pounds	92,146
Insulation (4.5 inches thick)	Square feet	6860
Common brick	One brick	14,291

*The energy reported here is that used to mine, extract, transport, refine, fabricate and incorporate the materials in buildings of any sort, and includes administrative activities.

Source: Stein, *Architecture and Energy*.

Table 1-4 **Carcinogens Discovered in a Nationwide Drinking Water Survey***

Compound	*Number of Cities Detected*	*Concentration in Ppm†*
Chloroform§	80	less than 0.1 to 311
Bromodichloromethane§	78	0.3 to 116
Dibromochloromethane§	72	less than 0.4 to 100
Bromoform§	26	less than 0.8 to 92
Carbon tetrachloride	10	less than 2.0 to 3
1,2 Dichloroethane	28	less than 0.2 to 6

*Of eighty cities tested by the Environmental Protection Agency.
†Ppm is the abbreviation for parts per million, or one gram in one million grams of water.
§These have been found to arise primarily from the chlorination of drinking water, rather than from industrial sources.

Source: Harris, "Carcinogenic Organic Chemicals in Drinking Water."

degree—small though it may be in some cases but substantial in others—we can gain a measure of control over our own lives by creating integrated life-support systems in our homes that conserve energy and resources. These houses can then be used as bases for creating more self-reliant neighborhoods and communities. When we engage in such activities to increase our self-reliance the quality of life improves rather than continues to degenerate.

It is a paradox that the way to becoming more self-reliant is through increased understanding of our dependence upon the physical and biological processes of our planet and the social inventions that use them. By getting to know these processes, we can stop interfering with and destroying them and can make them work for us. Aiding in such understanding is one of the goals of this book.

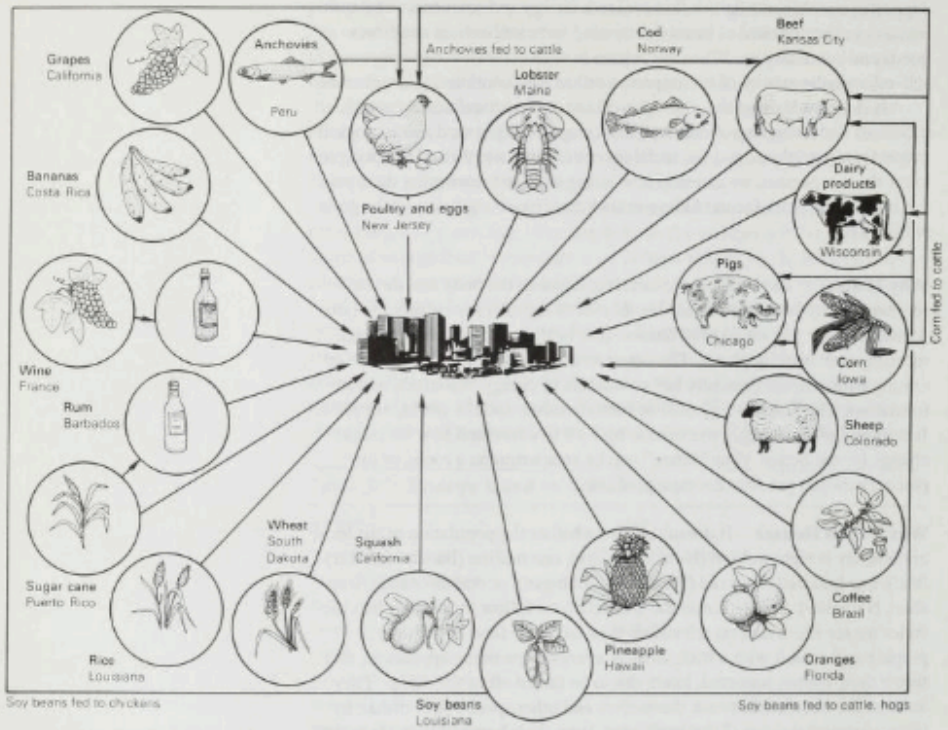
Why House? The house is the interface between the body and the environment, a physiological buffer. The house, though not necessarily the family home, is the key social environment (the birth, growing, living, dying, meeting, and learning place). The house structure itself, and the systems operating within it, are presently key consumers of energy, resources, and information. The house is a symbol of both ourselves and the world, our earth. It is a good place to begin to examine how we live now and how we might change for the better. Your "house" can be an apartment, a room, or any place where you get your necessities of life.

Why Urban House? It doesn't matter whether the population of the local community is eight million (New York City), one million (Baltimore, Maryland), one hundred thousand (Dearborn, Michigan), or one thousand (Arapahoe, Nebraska). People across the United States follow the same urban lifestyles we see illustrated on television: they buy their food at the store, prepare and cook it with a wide array of energy-consuming appliances, and throw their wastes, unsorted, into a can to be carted off to the dump. They manage the interface between themselves and other species they dislike by using chemical poisons. They work away from their home, if they are lucky enough to find a job (47 percent of United States farmers have off-the-farm income), and get to work by automobile. They live and work in structures that waste prodigious amounts of energy. And they go through their daily lives largely out of touch with the regional and seasonal rhythms of which they are a part except, perhaps, as these relate to the pocketbook, and in disasters like floods, tornadoes, and hurricanes.

The city is a funnel for resources. From the rest of the country resources pass through the city on the way to the dump—for example, trees → paper → dump. This funnelling effect is illustrated in Figure 1-3. At the same time, urbanites largely determine public policy. The price of agricultural land and the management of wildlands and forests, either by unconscious consumer behavior or deliberate decision through the political process, are largely under the influence of people who live in urban areas and/or follow urban lifestyles.

Why "Integral"? Integral means together, whole or complete, and at the same time, essential. We chose the term integral urban house because we

Figure 1-3 **The Urban Funnel: Food Passed through Cities to Dumps**



were striving for an integration of ideas about structure both as habitat and life-support system. There is a need for a new synthesis of biological and architectural ideas (biotecture or ecotecture, if you will). To integrate these areas, models for new ways of life and corresponding structures are needed that will show the way to a solar economy and demonstrate energy and resource-conserving methods and lifestyles. These models must show an integration with the biophysical region in which they are situated. One model for the country or the world is not enough.

New or Used: We decided to focus our efforts on the rehabilitation of an existing home rather than building from the ground up. We considered the tremendous investment of materials, natural resources, and energy that society has already committed to the maintenance of existing structures. To allow housing to deteriorate in favor of new construction would be essentially to waste precious resources. Also, we know that if our efforts were to become a national model, then demonstrating retrofit technologies would be most appropriate, since only a small percentage of the population has the

capital to finance construction of a new home. The building costs associated with renovating houses are generally only a fraction of those for new construction. For example, Oakland Better Housing, a private firm that specializes in rehabilitating older homes in the San Francisco Bay Area, usually budgets $15 to $20 a square foot in construction costs for the complete overhaul of a house. Compare that figure with the typical construction costs of a new northern Californian house, $35 to $45 per square foot.

Housing rehabilitation is recycling in its most profound sense. In many rundown neighborhoods where inexpensive older homes are found the renovation of one could inspire other householders to refurbish their property. For example, when the Farallones Institute purchased what was to become the Integral Urban House, the neighborhood was in serious jeopardy of being lost to land speculators. Industry and Berkeley city officials were considering condemning the dilapidated homes on our block and converting the neighborhood into an industrial park. Our remodeling of the Integral House not only dignified this one particular residence, but uplifted the spirit of the neighborhood. Soon other energetic families purchased homes nearby and started rehab efforts of their own. In three years, eight homes in the neighborhood were restored and once again occupied by families. Vegetable gardens sprang up in backyards and the neighborhood became a community of integrity and purpose. Its residential character was restored and the effort of business to convert the block into an industrial park was headed off.

Changing One's Lifestyle

The realities of a growing human population and finite earth resources make clear that present United States urban lifestyles will have to change. Whether they will do so largely because of catastrophe or by design remains to be seen.

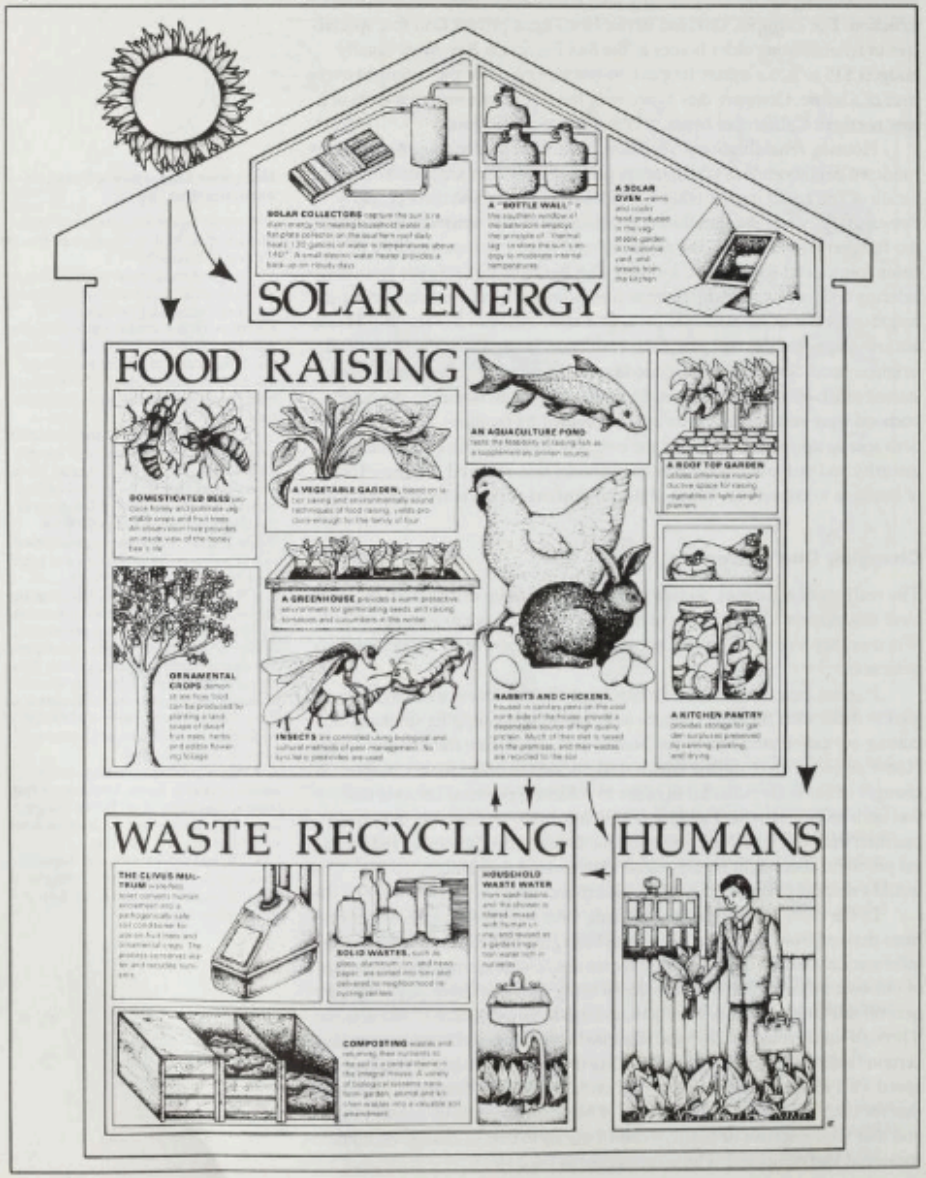
It is not easy to modify one's habits, as all of us know who have struggled to make such personal changes as losing weight, stopping smoking, or cutting out caffeinated beverages. Some years ago, before the Integral Urban House project, two of us (the Olkowskis) decided to make some massive changes in our daily behavior in order to achieve a personal lifestyle that was both more self-reliant and less environmentally destructive. It seemed essential that we experience first-hand the kinds of psychological and physical problems that might be associated with making the changes we felt would eventually be required in the society around us.

In our case, the motivation for change was based on a series of convictions derived from academic training as biologists and from certain current information sources. The challenge for us was how to change a whole series of our own behavior patterns in order to bring them into harmony with our general self-image and our beliefs regarding the consequence of our actions. Through initial introspection and discussion we came to the conclusion that certain factors were crucial in influencing the comfort we felt or the ease and speed with which we were able to take on new behavior patterns. It seemed that for each individual and each kind of behavior these factors would vary, and that their negative or positive contributions to ease of change could be measured and compared. These factors are as follows:

Motivation for change is based on understanding that:

- much significant environmental disturbance is directly due to the activities of humans;
- such disturbance is resulting in a deterioration of our own lives through a direct decrease in comfort and pleasure (some simple examples are the unwanted defrosting of foods in the freezer due to power blackouts, the clouding of a favorite view by smog, and increased noise from a new freeway);
- this environmental deterioration may be directly affecting our health and length of life—for example, by increasing our chances of developing cancer because of the chloroform in the municipal water supply (see Table 1-4), or exposure to pesticides in our surroundings and on our food (see Table 7-2, pages 148–49);
- this degradation is affecting the life of other species on the planet and increasing the physical constraints under which life operates (examples are heavy-metal pollution of the San Francisco Bay resulting from waste-management practices in the area, or the potential increase in ultraviolet radiation through use of fluorocarbons in aerosol cans);
- these recorded disturbances among other species, because of the interrelatedness of all living things, must ultimately affect all human lives and thus our own welfare;
- life coevolves with the environment, and environmental changes must ultimately affect the life that is dependent upon it.

Figure 1-4. **Habitat & Life Support System of an Integral Urban House**



1. Cultural and/or Personal Taboos: For example, some designs for composting or waterless toilets require physical manipulation or direct visual confrontation of human manure and other wastes.

2. The Apparent Immediacy of Catastrophe: For example, the California drought and consequent water rationing in the San Francisco Bay Area were perceived as threatening when cherished home landscape vegetation began to turn yellow and die. This situation paved the way for a speedy adoption of greywater (used water from sinks and showers) technologies.

3. Amount of Sustained Awareness Generated: Using the above example, constant daily media reference to the drought helped to create a climate of reminders.

4. Family and Community Support: The actual or anticipated reaction of family members, neighbors, and landlords to digging up the front lawn in order to plant corn, for example, could affect the home food-raising experiment considerably if the front lawn is the only sunny area available for the effort. This also relates to larger systems within the community that may exist to support that behavior. It is easier to begin recycling your newspapers in a community like Berkeley, California, where a regular monthly, city-wide pickup exists and where other people's neatly tied bundles are visible to remind you, than in a location where you must actively seek out the one or two places that provide that service to only a few households and only through special efforts on their part.

5. Amount of Stress Experienced from Not Changing a Behavior: A circumstance that encouraged us to recycle was that we could rarely fit all of the household garbage into the garbage can. In our large household, almost every week we had to deal with the hassles of trying to force all the garbage in the can, leaving some of it outside or around the house (particularly paper and cardboard), or paying extra to have it hauled away.

6. Amount of Information Available on Options for Change: We could switch to a car with better mileage performance only when reliable information from consumer testing services was easily obtainable to help us choose wisely.

7. Immediate Rewards Available: These we provided for each other through verbal praise and expressions of admiration. We were living up to our image of each other as responsible citizens and flexible individuals.

8. Self-Image: Obviously whether our self-image corresponded with "waste not, want not," or "fly now, pay later" influenced the amount of pleasure we could receive from activities with delayed rewards. For example, with respect to storing organic kitchen wastes, later to turn them into garden compost that would then be useful in the growing of plants, the ultimate reward of harvested food comes many months, or sometimes seasons, after the initial effort.

9. Concrete Models Available: With all the sets of matching kitchen or household containers on display in a typical large hardware/variety store, we have yet to see an attractive set marked "aluminum," "bi-metal,"

"glass," "paper," "organic wastes," and "nonrecyclables." Nor did we know of a single household we could visit that was so equipped at the time we began our recycling efforts. In fact, the reverse was true. Family and friends happily dumped all these wastes together in a single can, just as we had done. Nor was provision made for the convenient sorting of wastes in the design of any of the households that we were aware of. No practical hands-on models existed at all.

Table 1-5 shows how we rated the significance of each of these factors in relation to one desired behavior change, the sorting of garbage. You may enjoy a similar exercise in attempting to predict the success of a venture to change your own personal lifestyle.

By analyzing what we went through to set up a home recycling center—where the organic waste, glass, paper, metal, and other materials could be sorted for processing—and actually beginning to sort out our household wastes, several insights emerged. The process looked something like this:

Problem Perception: First of all we formulated the problem by bringing our ecological knowledge to bear upon the pollution problems evident around us and at that time just beginning to break into the national and local media. We saw that separation of wastes at the source in the home was the critical step, not the creation of a machine, for example, that sorts what was once sorted. That was 1969, the year of Earth Day as well as much Save the (San Francisco) Bay activity. The latter directed the public's attention to the fact that San Francisco Bay was rapidly being filled in by dumps, or "sanitary land fills," among other things. Within various predicted lengths of time, the Bay Area cities would run out of places to dump their garbage.

Table 1-5 **Some Major Predisposing Conditions Needed for Behavior Change**

This table is a rating made by the Olkowskis of the positive and negative influences they experienced in 1969 when they were teaching themselves to sort their own garbage and recycle their household wastes.

Predisposing Conditions	*Degree of Influence**							
	Negative					*Positive*		
	4	3	2	1	0	1	2	3	4
Cultural and/or personal taboo					★				
Immediacy of catastrophe					★				
Sustained awareness of problem							★		
Family support				★					
Community support							★		
Stress if change didn't occur						★			
Positive incentives (verbal reinforcement)									★
Information on options						★			
Self-image									★
Availability of concrete model	★								

*A value of zero (0) represents neutral influence. The authors felt that personal and cultural feelings pro and con about handling their own wastes averaged out, leaving them neutral on this aspect. Community support was expressed by the willingness of the Consumers' Cooperatives of Berkeley to establish a weekend recycling center on one of their parking lots, and the City Health Department signifying their approval of the development of home composting systems by issuing a pamphlet on the subject written by the Ecology Center. Obviously, the total points on the positive side showed that the attempt at behavior change was very likely to be successful. It was, and has persisted, and has been thoroughly integrated into the rest of our living habits.

Goal Articulation: Nature recycles, humans do not. Humans should! (Our species is paying a heavy price for not recognizing that humans are a part of nature.) Once the goal of recycling our "waste" had been articulated, we spent a great deal of time talking about it. We were preparing ourselves for the question, What are *we* doing about environmental pollution? "If we are not part of the solution, we are part of the problem."

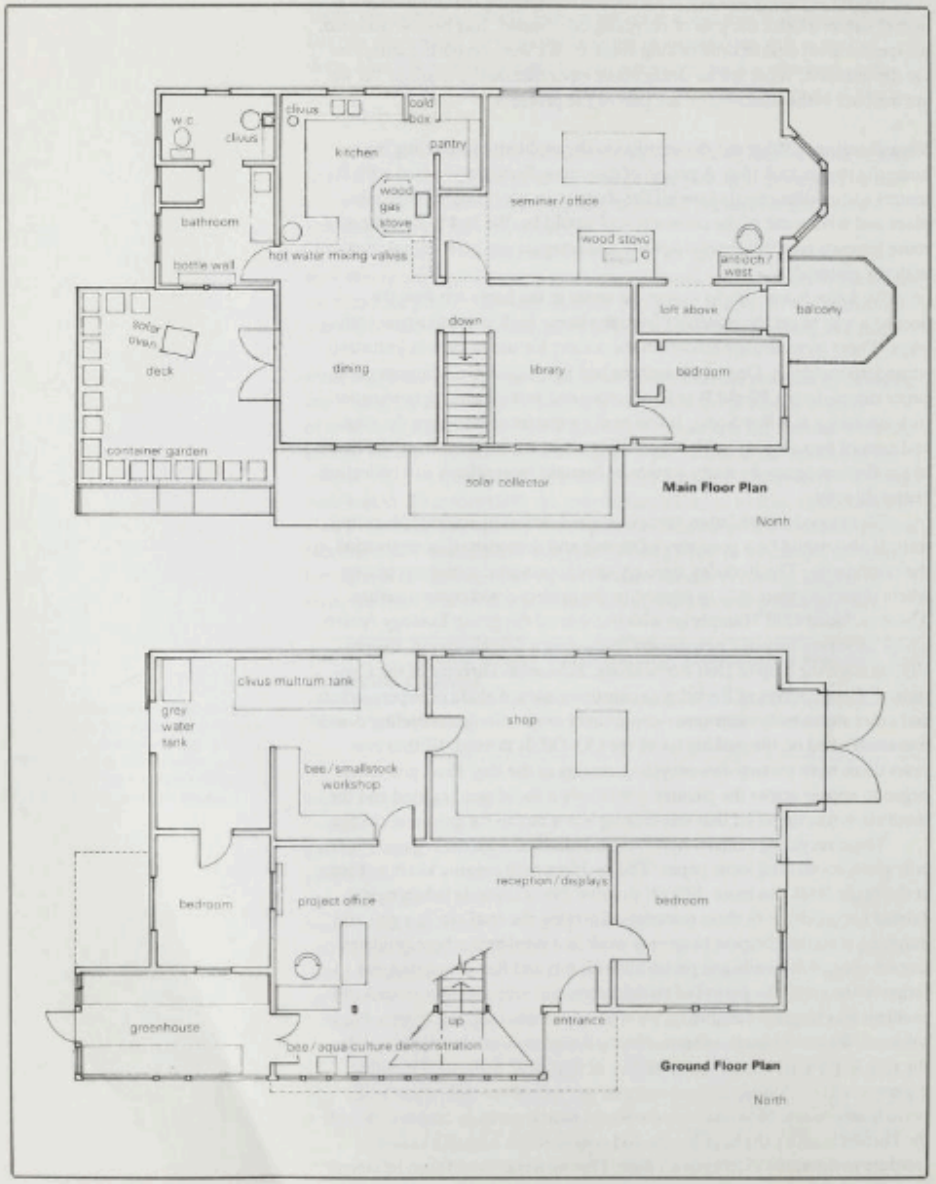
Visualization: What did the solution to the problem of recycling our homesite wastes look like? A period of extensive discussion ensued with attempts to visualize exactly how all the changes in our lifestyle could take place and what some of the consequences would be. We had to investigate a route for each type of household waste and imagine our personal interactions with the materials.

We knew it was simple to sort the waste at the home but now we needed a way to get the materials from the home back into industrial pathways. There were already models in the society for use of certain industrial secondary materials. One of the authors had participated in aluminum and paper drives during World War II. Another had participated in newspaper pick-up drives as a Boy Scout. It was really a matter of weighing the pros and cons of two obvious models: materials could be collected from the home to a collection center by a city service or brought by residents to a collection center directly.

We decided on the latter, since it seemed easiest to accomplish at the start. It also would be a good way of testing and demonstrating motivation in the community. The Berkeley Ecology Center provided a meeting place where others we were able to interest in the project could come together. These included Cliff Humphries who had started the group Ecology Action, whose members recycled newspapers in their own neighborhood. Eventually, through the help of Don Rothenburg, Education Director of the Consumers' Cooperatives of Berkeley (a consumer-owned chain of supermarkets and other stores with a consumer-community orientation), a recycling center was established on the parking lot of the CO-OP. It thrived. Within two years there were seventy-five recycling centers in the Bay Area, and others began to appear across the country. Obviously a social need existed and the motivation was there; all that was lacking was a model for behavior change.

These recycling centers, however, did not deal with the organic wastes, only glass, metal, and some paper. The problem with organic kitchen wastes at the home level was more difficult to solve. No acceptable urban model existed for coping with these materials. Carrying the stuff out in a pail and dumping it on the compost heap may work in a rural area where residents live far apart, but smells and problems with rats and flies precluded this solution in the city. The period of visualization and verbalization around this problem was lengthy. Gradually, we worked out what seemed to be a viable solution. We would keep separate, clearly designated, attractive bins under the sink in the kitchen for each category of inorganic material. Organic wastes would be drained in a colander by the side of the sink, transferred periodically to one of several small covered plastic garbage cans just outside the kitchen door on the back porch, and covered with a couple inches of sawdust so the smell didn't attract flies. This material would then be stored

Figure 1-5. **Integral Urban House Floor Plans**



until enough small cans of kitchen garbage, as well as weeds, leaves, and other garden debris, had been accumulated to enable the building of a one-cubic-yard batch of hot compost in a bin constructed for the purpose. (For a detailed discussion of this method, see pages 125–37.)

Internalization or Incubation: We found it significant that after we had clearly visualized the plan and accepted the proposition that implementing it was desirable a period ensued in which only continued talk but no action took place. Apparently, it was necessary to repeatedly confirm to each other the importance of the goal, the correctness of the model, and the details of the behavior change to which we were committing ourselves. As in Alcoholics Anonymous or Weight Watchers, we needed to reinforce our resolution through extensive verbalizing. This period of inactivity before taking the plunge we call internalization, or incubation. It seemed that something below the level of consciousness had to happen before we could actually shift our behavior in the desired direction.

Behavior-change Implementation: Finally, one day, we went out and bought the containers and began sorting our own garbage. It was easy. We couldn't figure out why it had taken us so long to actually do it. Once we were doing it and could describe or show the model, it was easy to effect a similar behavior change in others similarly motivated.

The Importance of Having a Model: One of our conclusions from this and similar experiences was the importance of having a model. This insight inspired us to develop the Integral Urban House in Berkeley as a model that people could come and visit. Another insight was the importance of providing adequate reinforcement for each other, through verbal approval, when we were the only ones we knew who were trying something different and everyone else thought we were a little crazy. Perhaps most important was the respect we gained for the difficulties of changing one lifestyle deliberately in the ways the Integral Urban House represents. Equally significant was the confirmation that the changes were worth making.

We believe that we have discovered a process for accomplishing environmental change that people in large numbers can easily adopt and learn. We have demonstrated that changes in behavior ultimately lead to environmental changes and that, conversely, in order to change any environmental condition one needs to first identify and evaluate the necessary behavioral changes. The Integral Urban House incorporates a set of solutions to the problems of living in the city that we have tested and believe to be valuable.