ENVIRONMENTAL PROGRAMMING:

CREATING RESPONSIVE SETTINGS

by

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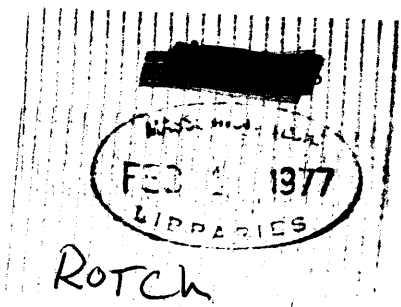M.U.P., The University of Illinois, 1967

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ABSTRACT

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Gary Arthur Hack

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the degree of Doctor of Philosophy.

Environmental Programming is the process of arriving at a set of
specifications about what to build or change in the way of man-occupied
settings. This activity takes various forms, including preparation of
architectural programs, the development of environmental development
standards, and ongoing management of built settings. The study proposes
a set of theories to guide programming activities, and illustrates the
impact of programming processes through a set of case examples.

Part I is concerned with four types of environmental definition
which are central to most programming processes: environmental packages,
environmental patterns, performance guidelines and clientship. As a
working process, probes of increasing detail are suggested in each of
the areas, along with techniques which can aid in clarifying intentions.
Two case studies of completed housing projects, Warren Gardens in Rox-
bury, Massachusetts and Chandler Village in Worcester, Massachusetts,
are included to contrast how environmental decisions are made in the
absence of a deliberate programming process as opposed to when pro-
gramming is an integral part of activities.

Part II is concerned with how those impacted by environmental
decisions can play a meaningful role in the programming of changes.
It critically reviews a variety of designs for participatory processes
and suggests how their elements might be most usefully employed. The
involvement of surrogates is recommended where eventual users are diffi-
cult to engage, and techniques for such a process are outlined. A case
study of documents and evaluations of the Ecologue process, an ambitious
participatory design applied to planning for neighborhood change. As
an extension of this project, a detailed analysis has been made of the
relationships between people's images of ideal environments and their
behavior in expressing what they desire in a participatory setting.

The study aims at integrating the many working methods of indivi-
duals currently engaged in environmental programming, and at providing
a conceptual framework which can aid in communicating what is known.

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TABLE OF CONTENTS   PAGE

LIST OF TABLES   PAGE

LIST OF FIGURES   PAGE

List of Figures (continued)

PREFACE

This dissertation is the result of a several-year excursion into a field I found myself practicing, and observing others practice, but which I understood only dimly. As nearly as I could judge, others shared the dilemma. Whatever illumination on the subject it represents is largely the result of the intellectual influence of Kevin Lynch, Stephen Carr, John Myer, Donald Schon, and a host of students with whom I have had the pleasure of sharing this journey. But, like all excursions, it had a cost attached to it that could not have been afforded without the unselfish contribution of energy, time, financial support and, especially, patience of others. Anne Washington and Sandra Congleton are two who aided me throughout. Kevin Lynch, who served as my advisor, made up the difference at so many points along the way. And Lynda Lloy, Andrew, and (now) Carolyn know the real cost and deserve the final credit for making it worthwhile.

INTRODUCTION

"If the program wouldn't keep changing, I could get on with the design." What designer or planner hasn't felt that, or said it aloud on almost every project? We all constantly live with the fear that new facts, that shifts in constituency or clients, or that the failure of assumptions will suddenly undo the elaborate groundwork on which our proposals are built. But such changes are the rule, not the exception, and much of what design and planning are really about is the transformation of murky, loosely-defined situations into ones which are dependable.

This is an investigation of techniques that can aid in clarifying the purposes and overall outlines of environmental changes, and thereby help build proposals on a more dependable footing. It explores a variety of devices—some tried, others only speculative—which may be useful in the early stages of making environmental decisions. Calling such things "techniques" immediately runs the hazard of setting simple procedures, which are often little more than common sense, on an oversized pedestal.[1] But sometimes, reflecting on ways of working that are taken for granted can aid in finding better ways.

All of the techniques which follow apply to a general sphere of activities which may be called environmental programming. The most familiar example of this work is the preparation of an architectural program. At the outset of a building project the architect, a specialized consultant or the client himself may analyze building needs, the relationships between spaces and the general guidelines for a design, summarizing these in a program document (or "brief", as it is called in Britain). Usually such a program contains little more than a listing of spaces to be accommodated, in square-

footage terms, notes on important spatial relationships and specialized equipment needs, and a budget for the project. But the program represents an agreement about what is to be designed and may reflect the end point of a lengthy set of discussions and negotiations. And this process of architectural programming is as important as the final product of those efforts.

Many other kinds of activities also fit under the umbrella of environmental programming. When sites are conveyed from public to private organizations for development, such as through the action of an urban renewal project, a series of design requirements or standards are generally made conditions of the transaction. These may be contained in a single written document or, more often, may begin with a brief list and evolve through an extended process of design reviews. Public agencies with regulatory or financing responsibilities—state housing agencies, agencies administering zoning or subdivision requirements, public development corporations, and the like—are involved in programming processes whenever they are formulating or reworking the substance of their requirements, or reviewing projects based on those standards. Developers of large projects such as new communities also use a set of standards and criteria for making day-to-day decisions. Sometimes these are set down formally in a development program that gets added to or changed as experience dictates; more frequently they exist only as a set of understandings by those managing the development.

What all of these activities need is effective techniques for proceeding from a loosely understood set of needs to a firm prescription for environmental development or change. Undertaking environmental programming is, in reality, participating in a form of design. Yet the skills that make one effective in programming are not necessarily the same as those which are

associated with the synthesis of environmental form. Programming is a more public undertaking, it emphasizes communication and agreement. It has its own imperatives in terms of "good process". The specifications which result from programming require different means of expression than those associated with more traditional design activities. For these reasons, it is worthwhile to focus on environmental programming as a field of action that requires its own special techniques.

I

The term "environmental programming" has a variety of meanings, often as different as the individuals who think they sometimes are involved in it. Both words are expansive and need parenthesis. Some emphasize "programming" in the computer sense; they mean how one represents or simulates environments in a computer media. Others think of it as the process of devising public "programs" which deal with the built environment—housing or area renewal programs, maintenance programs and the like. "Programming" can also refer to the process of scheduling construction, as practiced by construction managers armed with techniques that include PERT and CPM. Still a fourth use of the term "programming" is for organizing the activities which occur in environments—how one goes about planning the routine and occasional events in an existing set of places. The word "environment", too, has both common and special meanings. Commonly, people think of it as referring to the natural systems which support everyday life. When combined with "programming", it then means how one controls air or water pollution, prevents the despoilation of the landscape, and preserves aquatic or biotic communities. To use the term, and have it mean the same to all, a more precise definition is obviously required.

By environmental programming, I mean the process of arriving at a set of specifications about what to build or change in the way of man-occupied settings. The emphasis is equally on process and specifications and the variety of forms that each can take. Programming, as I have defined it, may include many of the things noted above. Computer simulations may be useful in exploring a problem. Public-sector or private-sector programs will need to be considered, even invented. Once having sketched an outline of what to build, one frequently also maps out a schedule of when to do so. Alternate patterns of activities will often need to be designed at the same time that characteristics of the settings are being considered. While none of these are excluded necessarily, whether or not they are included will depend upon the problem at hand. When dealing with the modification of existing environments for a set of current users, delving into how places and activities are matched and into the fine-grained scheduling of activities may be crucial. When dealing at a broader scale with building a vast array of new settings for new occupants, a computer simulation of the process of community creation may be required to test the workability of a particular set of specifications. And so on; the essential question is what one needs to know to decide what the man-occupied landscape ought to be like.

Many environmental designers would argue that they are, and ought to be, involved in all of these activities aimed at producing solutions to the problems they face. What, then, is the difference between programming and design? One distinction often made is between analysis and synthesis. Programming, many argue, involves disaggregating a problem into its components, gathering information about each and documenting them as the set of require-

ments for design solutions. Then design follows, as the process of exploring, deciding upon and knitting together solutions into a consistent whole.[2] A similar distinction is sometimes made between problem formulation (programming) and problem solution (designing).[3] But these dichotomies are too simplistic and, I believe, they inaccurately express what can and should occur along the path from feeling a vague need for changing or building something to inhabiting a modified environment. For one thing, the way of formulating a problem inevitably points to some solutions and exludes others. The way a problem has been formulated may need to be questioned when solutions reveal contradictions. Whole new sets of questions may arise in the exploration of alternative designs. The problem as initially stated may offer no guidance about how to decide between alternatives; new information is required. Design is always a dual process of becoming clearer about the problem and deciding upon solutions.

Perhaps a better description of the process which eventually results in new or modified settings is that it consists of a sequence of <u>conjectures</u> and <u>tests</u>. Each conjecture sketches the outlines of what actions are to be taken, what the shape of changes should be. Making a conjecture also means predicting what the consequences of an action would be; these can be tested against what is known and desired. Conjectures become increasingly precise as more is known and desires become clearer. Viewed in this way, the end point to the process is not the final decision about a design, because this too is only a conjecture that may be tested after construction by examining its actual performance. This implies a social and individual learning process: clients learn about their needs by considering successively more precise conjectures of what to do; designers understand more fully the problem

by seeing possible solutions excluded because they don't meet a set of tests that become more precise or are added to as work progresses; we understand how to write better specifications, or invent better solutions (for a neighborhood, a street, a housing area) by seeing how well other such areas matched their expectations.

Of course, that is the ideal. Too frequently designers or planners accept the problem as it is presented to them; in the vast majority of cases environmental changes go untested. Partly, that is because designers view their roles as problem-solvers, and like the detective serial, the case is considered closed when an adequate design is found, or when time (read the fee) is exhausted.

If design begins with the first conjecture that an environment is inadequate and must be replaced (or added to, or changed...), then programming consists of those early design activities that help to clarify the motivations for changes, the behavioral supports which the setting should provide, the economics of changes, the levels of performance which are expected, the schedules for changes and, equally important, the design avenues which might yield the best results. Programming is thus the beginning of design activities and there is no firm line that divides programming from what transpires later. All have a bearing eventually on the actions which are taken.

A person who calls himself either a designer or a programmer might equally ask the questions which lead to first conjectures. But the world often separates early and later design responsibilities and that is not necessarily undesirable. Persons with detailed knowledge about construction or operation are not necessarily the most capable individuals in looking

synoptically at a situation; they may be too committed to solutions which use their detailed experience. Too many buildings have been built without considering other non-building solutions because clients engaged an architect at the outset, rather than a management consultant or programmer. Where both public and private agencies are involved, there is frequently a split in activities between early and later design, with the public agency communicating intentions (in the form of zoning bylaws, site development standards, etc.) and the private organization developing a design which fits these parameters. And skill requirements are a further argument for a separation of roles. Early activities frequently depend upon consultative abilities, the facility of reconciling often divergent influences of economics, politics and human needs, and the ability to organize a process so that difficult commitments can be made. Later activities require an equally broad range of knowledge and skills, but it is often centered on questions of means. Not everyone is equally capable in both arenas.

II

Environmental programming is the focus of increasing attention in the design professions. In rapidly-changing society, new institutions emerge; there are few precedents which offer guidance about how they should be clothed. What we mean by "build a school", "build a dormitory", or "build a church" is no longer easy to judge: each project demands a separate analysis of its possible role in its particular context. The decision to move to a new environment may become an appropriate point to reconsider basic questions of institutional purposes. An organization may have emerged in spaces that served only minimally the programs it wished to mount; there

may be scant reason to pour these arrangements in concrete in a new setting.

Some of the most important shifts which can and do occur during a programming process may involve the substitution of services, processes or rearranged activity patterns for increased space. A recent Educational Facilities Laboratory report lists 17 school systems which have solved school expansion problems through various scheduling devices which made more intensive use of existing spaces.[4] At least a dozen cities have undertaken experimental "schools without classrooms" which tap available community resources by taking students to them, rather than providing special-purpose spaces for the students. Many other institutions have responded in similar ways: churches double up or agree to provide combined services (as in Columbia, Md.); drugstores become mini-post offices (in Canada); local service streets become play areas during parts of the day thus relieving some of the open space needs of a neighborhood; banking by mail replaces the customary trip to the teller and changes space needs. Since this is happening through clear-headed management or organizational analyses, what can the environmental programmer contribute to such realignments?

By linking environmental analysis to the normal process of management, by considering the quality of settings at the same time as the organization of activities, the chance for substitutions may be increased. Often the environment is a revealing barometer of needed institutional changes: temporary adaptations made by the occupants in order to "get by" highlight areas of growth; spaces persistently rearranged, areas unused, different rates of wearing out of the environment, vandalism or disregard signal a gap between intentions and reality. The programmer is wise to look for substitutions where the cost of environmental maintenance is high relative to

other factors. Thus, the typical office structure, where salaries of users annually average ten times the cost of providing and furnishing their space, is a less likely candidate than schools where the costs are more nearly equal. Efficient use is not the only criterion in looking at an environment; the creative programmer can learn to read many clues of how well the organization is performing.

Whether an analysis of an institution's environmental needs should be done by a manager or designer is not the essential question. Creative programming requires skills that go beyond physical design and management alone to view the two in a single framework. Programming for institutions might become an ongoing process akin to annual budgetary reviews. It should be possible to develop an environmental accounting system that measures the performance of the setting and relates it to the constantly evolving goals and expectations of users—more will be said of this later.

A second important source of initiative for environmental programming is recent shifts in the processes by which environments are developed. Manufactured building systems offer the potential to deliver whole assemblages without requiring the painstaking piece-by-piece detailing and specification by architects and designers. Increasing vertical integration of the building industry has meant that an ever-expanding range of building types are being purchased rather than designed as unique projects. Understandably, this shifts the burden for advocating environmental quality onto the shoulders of individuals specifying the performance expected of manufacturers' systems. In the area of school construction, where a number of such systems have been developed (the SCSD in California, the Toronto SEF pro-

gram, Montreal's RAS; similar programs in Florida, Boston, and Detroit),

the bulk of energies of school facilities departments has been devoted to

performance specifications, rather than working with architects on specific

design details.[5] The federal government recently completed a similar set

of specifications (PBS: Public Building Specifications), as the basis for

"purchasing" developer-designed structures to meet its office space needs.[6]

Even more modest shifts in construction techniques, such as the introduction

of "fast-track" construction (where construction begins before even a pre-

liminary design is complete), have made it necessary to be more precise

about desired spatial characteristics at the earliest stages of program-

ming.[7] In New York City impetus for careful programming has arisen from

another source: the desire to make joint use of school sites. At least

three public schools (PS 99, PS 126, and PS 169) have been completed by

private developers according to city specifications, as part of packages

where apartments were also built on the sites.[8] Inner-city churches in

many cities are looking towards more intensive joint use of their land as

a source of revenues to offset their dwindling congregations, often obtain-

ing new and very different facilities as part of the bargain. Where land

is conveyed with such conditions, the onus is on the institution to pre-

scribe clearly the environment it desires.

At a larger scale, changes in the form of zoning, development regula-

tion, and development review all are demanding more exact and testable spe-

cifications for environments early in the development process. Beginning

with the Planned Unit Development ordinances of the early sixties, many

cities are shifting zoning and subdivision controls away from end-state re-

gulation (which bind the form of development to prescribed minimum and maximum dimensions) towards more flexible statements of intent, leaving details to be negotiated during the review process. New York City's incnetive zoning offers economic inducements within certain districts if new structures meet specific performance tests: more office or residential floor area for creating a public plaza, a mid-block walkway, a subway connection, or for including a legitimate theatre. San Francisco has gone beyond by down-zoning the entire central area an average of 30 percent, balancing this by allowing the development to be scaled up from this level if one or more of twelve attributes are present in the new development.[10] Toronto, in 1973, passed an ordinance that is unique among large cities. Ostensibly prohibiting all projects greater than 40,000 square feet in area or more than 45 feet in height, it forces developers of larger projects to seek a special permit and to justify projects on their merits. The city is currently attempting to agree upon standards for the performance of large projects to aid in making judgments about them.

Perhaps the most sophisticated attempt to delineate such flexible zoning standards is New York City's proposed Housing Quality Program.[11] The amount of development that will be approved on any site is to be tied to a series of precise tests which assign a development point in four broad categories: neighborhood relationships; quality of recreation opportunities in the project; security and safety requirements; attributes of individual apartments. Trade-offs are possible, but if a development fails to attain certain minimal point totals, it would not be permitted to fill the entire building envelope now permitted under normal zoning requirements.

A variety of cities have adopted performance zoning codes, in whole or part, waiving all pre-set requirements such as use districts, setbacks, heights, and densities in favor of measures of the internal (on site effects) and external (off site effects) performance of the development. These new forms of regulations force those writing performance standards and those reviewing developments to be precise about what qualities of environments are desired to develop detailed measures of performance. Operating by guesswork is not an adequate process, either tr the courts or to maintain public confidence.

Added to the shifts in public regulation, the National Environmental Protection Act, which requires that environmental impacts of projects be made explicit and publicized prior to public decisions has had a similar effect of forcing more balanced consideration of development. While only applying to federal actions, many states have instituted parallel requirements. Most Environmental Impact Statements (EIS) have focused heavily on the "green environment" (air, water, protection of natural and biotic systems) with only cursory reference to social and human factors. Too often they have dealt with only the most easily-measured attributes (noise levels, displacement of families, etc.). A further disappointment in early EIS's has been the virtually exclusive focus on external factors, neglecting onsite issues. (The height of absurdity is an EIS for a new community which is limited to the impact of the project on adjacent lands). Still, court rulings are forcing the EIS format to be taken more seriously and programming practice has begun to respond: one ruling requires that on site impacts be included; another requires that they be prepared by the agency

with jurisdiction, rather than by consultants or proponents of a project, thus creating greater potential for agency learning; a third ruling requires agencies to recognize aggregate impacts of several projects in an area, leading agencies to devise environmental accounting systems.[12] The EIS process may have the effect of encouraging a new form of professional who is broad ranging in knowlege and able to integrate and balance the contributions of many specialized disciplines.

Ten years ago we might have expected the central integrative contributions in environmental programming to emerge from the cadre of social scientists drawn to the new field of human-environment relations. But, in truth, their efforts have had little influence on programming practice, despite good intentions.[13] Partly, this is because research on the interrelationships between settings and behavior has remained narrow, refusing to incorporate economic and organizational influences, concentrating on general theories rather than taking its cue from applied problems. Stylistic differences between designers and researchers, differing viewpoints on the confidence that may be placed in data, and a general reluctance of researchers to indulge in prescriptions have all served as barriers to fruitful collaboration. Lacking a commonly accepted format for joint work, designers and planners have continued to rely upon their own devices, and common sense, to arrive at their programmatic conjectures.

III

Viewing the field as I have defined it, most planners and architects spend some of their time doing environmental programming. But, sometimes to cope with complex projects, consultants and organizations are engaged

for their special competence in programming.

A recent survey of architectural practice, among firms with NCARB

members, reports that programming is the service offered most frequently

by firms which go beyond the traditional package of architectural services.[14]

As Tables 1 and 2 indicate, fully 84 percent of architectural firms say

they have staff capabilities in programming (although a smaller proportion,

54 percent, describe this as a "primary" service role). A much smaller

proportion, 5 percent, indicate that they frequently use outside consul-

tants for such work. While many firms or individuals profess such capabili-

ties, the expertise for their practice appears to have evolved completely

on the job. Until recently, no school of architecture taught courses in

environmental programming; no textbook exists for the field; no profession-

al society or journal serves as a rallying point for issues of practice;

architectural journalism virtually never deals with how the program was

established. Yet, the practical necessity of reaching clear agreements

early in a building project, and the costliness of having a program con-

stantly shift, has led most architectural firms to organize special divi-

sions for programming.

William Caudill describes the basis of programming practice in his

firm, CRS, Inc., by charting the attitudes of the principal responsible

for it:

> "It took Willie Pena about ten years to find 'his place'
> on the team. He went from specifications, to color, to
> project management, to running the drafting room, and
> finally to programming...Pena believes that 'it is only
> by first seeking out the problem and defining it that a
> valid solution can be developed.'...He strongly advocates
> the client/user's involvement in the process. He believes
> that although the programming process is essentially ana-

TABLE 1
SERVICES PROVIDED BY ARCHITECTURAL FIRMS WHOSE PRINCIPALS ARE NCARB
MEMBERS

	In-House Staff		Consultants	
	Rank	%	Rank	%
Programming	1	84.2	12	4.5
Interior Design	2	62.9	11	8.8
Graphics	3	58.9	10	12.6
Construction Management	4	54.2	8	24.5
Estimating	5	52.6	9	14.9
Urban Regional Planning	6	45.6	7	27.7
Real Estate Development	7	36.1	6	40.2
Contracting	8	24.1	3	61.5
Landscape Architecture	9	20.0	5	49.6
Structural Engineering	10	15.9	4	56.4
Electrical Engineering	11	10.1	2	74.1
Mechanical Engineering	12	9.8	1	74.5

Source: National Council of Architectural Registration Boards 1973
Certificate Holders' Questionnaire

TABLE 2
AREAS OF PRIMARY ARCHITECTURAL SERVICE BY ARCHITECTURAL FIRMS WHOSE
PRINCIPALS ARE NCARB MEMBERS

Rank	%	
1	78.1	Design
2	73.6	Administration
3	65.3	Contact and business promotion
4	58.3	Contract drawings
5	55.9	Construction observation
6	53.9	Specifications
7	52.6	Programming
8	48.0	Feasibility
9	34.4	Estimating
10	9.4	(Other)

Source: National Council of Architectural Registration Boards 1973
Certificate Holders' Questionnaire

lytical, there is room for intuition, but reminds
us that 'intuitive insight must be based on know-
ledge and experience.' Pena was the first person
I heard talk about the necessity to distinguish
'wants from needs'. He says, 'A wants-versus-needs
situation occurs whenever the client defines his
problems in terms of architectural solutions (form
and space) rather than functional requirements'.
He concludes, 'The architectural team's job, then,
is to determine those assumptions upon which the
client based his solution and to evaluate these....
Architectural practice is no different from any
other process. You can't solve the problem unless
you know what it is'."[15]

Pena's ideas are typical of the ways in which practitioners in archi-

tectural firms describe their involvement in programming. Practice-born,

their theories emphasize the value to clients (and not incidentally to

firms) of thinking clearly at the outset about the reasons behind their

decisions to build, rather than confronting those issues later when build-

ing cost estimates exceed their reach, or even later when operating costs

saddle them with a greater commitment than they can manage.

Architectural firms usually sell programming to their clients by

demonstrating its value in economic terms.[16] Buildings are durable, they

argue, and the best time to consider changes in use is before construction

rather than after, when only renovations can recoup poor decisions. But in

reality, few architectural firms are able to accumulate the expertise their

paying clients seek. One reason is that the vast majority of firms are

small, unlike CRS, and personnel shift from role to role and firm to firm.

There is little opportunity to evolve a collective set of theories about

programming practice. Moreover, small firms have few chances to repeat a

particular type of building project. Even when they do, the context may

be so different and the timing so distant that they see little to be

gained by drawing upon past experiences. These are familiar problems of

architectural practice--witness the equal difficulty in improving the

technical performance of buildings--and many new firms are beginning to

take seriously the issue of how to develop organizations that "learn".

In environmental programming, what they need most is procedures that help

record and make sense of experience.

Most large institutions such as universities, hospitals, and cor-

porations, have also recognized the importance of an ongoing analysis of

needs by creating programming units as part of their planning divisions.

Actual programming practice, however, usually is highly routine: build-

ing programs seldom go beyond the most basic cataloging of spaces; almost

never do they re-examine the pattern of activities that place demands on

spaces; only occasionally do they evaluate completed environments. Yet

organizations which are involved in development that is staged over long

periods have the potential to learn by systematically drawing upon prior

experience. Usually they lack a framework for organizing that experience

and making sense of it. An exception is the State University of New York,

which has invested in an ongoing system of monitoring the results of

building projects, organized by T.A. Davis.[17] Their procedures employ a

variety of environmental measures, accounting for human needs in terms of

behavioral fittingness, constructional and operational efficiency and ac-

tivity support.

If institutions often find it difficult to undertake the self-

examination that is so essential to improving their spatial conditions,

a range of consultants have emerged who specialize in such interventions. Some have evolved out of more traditional consultancy in management and public administration. For example, Peat Marwick and Mitchell, Inc. (Toronto), a large firm of management and accounting consultants do environmental programming as an extension of their ongoing relationships with some organizations, particularly along with developing management systems for hospitals. Griffenhaggen-Kroeger, Inc. (San Francisco) specializes in public administration; their programming unit helps governmental units sort out their space needs and make decisions about how to accommodate growth. For other firms, environmental programming is the main fare: Becker and Becker, Inc. (New York)[18] and TEAG-The Environmental Analysis Group (Vancouver)[19] are two examples. Often these consultants become the paying client's advocate in negotiations with an architect. They speak the same language of designers and, indeed, are often retained as insurance against buildings the client cannot afford.

Planners face many of the same difficulties as architects in accumulating the experience necessary to derive grounded environmental standards or specifications. Typically, a public agency which approves hundreds of zoning applications each year will never evaluate the quality of environments which result, except in impressionistic terms. For example, although several scores of plazas have been built in midtown Manhattan since incentive zoning was initiated, the results have never been systematically analyzed by the planning agency in behavioral, climatic or perceptual terms.[20] "Open-space communities" have been built in most American cities through the vehicle of planned unit development zoning provisions, yet the reviewer of such applications typically can rely only upon

firsthand experience, and the developers' claims, for guidance about how much open space is adequate, how it might be used, or where it ought to be located. The appropriateness of planning standards remains among the great uncharted areas of knowledge about environments.

Among planners, environmental programming is often considered an adjunct to the more continuous roles which they inhabit. Zoning officials spend the bulk of their time navigating the intricacies of legal due-process, giving little attention to broad assumptions about the purposes of regulations. Urban design efforts frequently are devoted to spinning out images of what the city might be like; but how these are to be translated into actual environmental specifications is often a weak afterthought. While there should be a fit between these two spheres of concern, in most agencies both tradition and the organizational map serve as barriers.

Because planning usually occurs in a public arena, there is an increased need for process skills to broaden participation in decisions about standards and regulations. Among municipal agencies, this usually extends no further than managing a public hearing so that it results in consensus. Often the detailed environmental issues are a largely symbolic backdrop against which the real script of power relationships is rehearsed. More meaningful participation poses a dilemma: environmental standards or specifications are abstract and remote from everyday concerns of the public and therefore stir little interest; yet when a proposed project is seen as threatening, even though it meets prevailing requirements, it is often too late or unfair to undertake a re-examination

of the ground rules. Most public agencies lack effective processes which assure participation at both specific and general levels.

Typical as these patterns of practice may be, there are, of course, exceptions. A number of planning consultants have accumulated experience in a few areas of large-scale development and attempt to bring these to bear on successive projects. Gruen Associates, Inc., for example, has developed a finely-tuned model of shopper behavior in shopping centers and in downtown areas;[21] the environmental standards which underpin their designs are tied directly to this. We may wish that the model went beyond simply producing efficient shopping machines, and that others could share their knowledge, but that strikes at the heart of professional proprietorship. The developer of Cedar-Riverside, a new-town-in-town in Minneapolis, has formalized a process of revising the community design program based on what is learned as the community develops. The community is deliberately subdivided into 10 percent increments of development; each year a new development plan is drawn based on what has been learned; every two years a new physical model of the community is constructed. The planners of the California Coastal Conservation Commission have developed a highly successful process for involving outsiders, ranging from technical experts to ordinary citizens, in the evolution of a plan for California's coastal areas.[22] Environmental standards have been subdivided into nine broad categories, ranging from appearance and design to earthquake hazards to groundwater capabilities. Open debate in each region of the State is devoted to proposed standards, further public opinion is sought through questionnaires. At the same time, the agency is charged with issuing per-

mits for all development in the coastal zone. Each hearing on a permit
application becomes a test of the emerging standards, and an illustration
to the public of their consequences.

There it rests: environmental programming practice has emerged out
of the day-to-day needs of planners and architects; the knowledge that
has been gained is dispersed and inaccessible; those involved share few
paradigms on which to hang their efforts. Taken together, there exists
a wealth of experimentation, some ill-founded, some promising. Perhaps
the most important task is to provide a structure for beginning to com-
municate experience and insights. Over time may emerge a more consistent
sense of professional action.

IV

The chapters which follow are an attempt to frame a perspective for
understanding techniques that are useful for environmental programming.
They are divided into two main sections. Part I (chapters 1-7) describes
the different types of environmental information which are generally
sought during a programming inquiry. It illustrates the differences be-
tween a design process which begins with an inadequate base of information,
and one where programming is undertaken to expand this base. Part II
(chapters 8-11) deals with a range of process issues which seem to cut
broadly across many of the contexts of programming practice, and aims at
general theories which may be applied broadly. As in the previous section
a case example illustrates some of the process complexities of attempting
to apply theories to a situation. Finally, a brief prospectus for future
experimentation is included as an invitation to explore neglected areas of

thought and practice.

Both parts are eclectic, built upon my experiences and those of others in the field. The three cases were chosen because they ranged across several of the important areas of programming work and reflected the efforts of professionals who are vitally concerned with the quality of built environment. Thus, variations in outcome have much to do with the techniques they adopted for the task, and their appropriateness.

Chapter 2 illustrates how programatic decisions are often made in the absence of a formal programming process or a synoptic document that is available at the outset of design. Warren Gardens is an award-winning middle income housing project in the Roxbury section of Boston. It was designed by Ashley/Myer Associates (now Arrowstreet, Inc.). The analysis centers upon how various programatic requirements arose during the process of design, and how the designers acted to accommodate these. While the designers worked for many clients—the developer who paid their salaries, the range of agencies with approval powers, and others—the eventual users of the project could not be identified in advance of construction. Thus, the designers were forced to their own devices for predicting how the environments might be received.

Chandler Village, on the other hand, is a case where the same architects engaged in extensive programming when beginning their design, including a process of involving eventual residents or their surrogates in a dialogue about needs and wishes. The project consisted of providing housing for 500 students at Worcester State College, in Massachusetts, the first such housing on the campus. In evaluating that project in Chapter 3,

particular attention is paid to what information gained from various formal and informal techniques had in shaping the final housing design.

In Part II, the case example shifts both emphasis and scale to explore programming in the context of citizens' groups planning for improvements to their inner-city neighborhood. ECOLOGUE, described in Chapter 9, was a participatory process, orchestrated by students and faculty from MIT, which aimed at involving a broad cross-section of ordinary residents in decisions about their future environment. Process issues are paramount: how to assure broad and meaningful participation, and how to manage a dynamic set of events that is intended to set the course for actually accomplishing what participants desired. But the issues which the planners faced apply also to many other situations both smaller and larger in scale.

The three cases are not entirely typical of the state of practice in environmental programming; in comparison to other situations they have generally been invested with greater dedication, more conscious attention to theory and detail, and often greater concern for the consequences of design on the eventual users of environments. They should be read as the work of professionals intent on improving the state of the art as well as producing responsive environments; any shortcomings are not because they lacked good intentions or intelligent foresight. The best programming practice builds upon experience and goes beyond. These cases are useful foundations.

FOOTNOTES - INTRODUCTION

1. For an insightful critique of methodological approaches, see Christopher Alexander, "Interview," Design Methods Newsletter, Spring 1972.

2. Christopher Alexander, Notes on the Synthesis of Form, Cambridge: Harvard University Press, 1963.

3. See Raymond Studer, "On Environmental Programming," Arena, May 1966, pp 290-296. Also, William W. Caudill, Architecture by Team, New York: Reinhold, 1971, pp 84-86.

4. Educational Facilities Laboratory, Inc., Places and Things for Experimental Schools, EFL, 1972, pp. 128-9.

5. For an interesting example of school performance specifications, see the technical documents prepared for the California SCSD system.

6. David Hattis, et.al., PBS: Public Buildings Specifications, 2nd Edition, U.S. Government Printing Office, 1974.

7. Smith, Hynchman and Grylls, Classroom Construction Program; State University of New York, 1966.

8. Educational Facilities Laboratory, op.cit.

9. N. Marcus and M. Graves (eds.), The New Zoning, 1970.

10. Ibid.

11. Urban Design Council of New York, Housing Quality Program, 1974.

12. Environmental Protection Agency, Environmental Quality 1972, U.S. Government Printing Office, 1972.

13. For an interesting diagnosis and suggestions concerning the role of programming in behavioral research, see Constance Perin, With Man In Mind, Cambridge: MIT Press, 1971.

14. National Council of Architectural Registration Boards, "Questionnaire of NCARB Member Firms," draft findings, 1973.

15. Caudill, op.cit., pp. 85-6.

16. See Edward J. Agostini, "Value of Facilities Planning to the Client," Building Research, April 1969, pp. 28-32.

17. T.A. Davis, "Evaluating for Environmental Measures," <u>EDRA IV Proceedings</u>, 1972.

18. Nathaniel Becker, "Space Analysis in Architecture," <u>American Institute of Architects Journal</u>, April 1959, pp. 40-47.

19. Gerald Davis, "The Independent Building Program Consultant," <u>Building Research</u>, April 1969, pp. 16-21.

20. An independent study of pedestrian behavior in plazas in New York City is currently being undertaken by William Whyte, but it is not explicitly an evaluation of the merits of the zoning bonus system which resulted in their construction.

21. For a "public" version, see Victor Gruen and Larry Smith, <u>Shopping Towns USA</u>, New York: Reinhold, 1960.

22. See Dennis Frenchman, <u>California Coastal Zone Planning</u>, Laboratory of Architecture and Planning, M.I.T., 1974.

PART I

PRESCRIPTIONS FOR ENVIRONMENTS

CHAPTER 1 - FOUR TYPES OF ENVIRONMENTAL INFORMATION

Environmental design projects usually begin with a sketchy list of things to consider and people to be contacted, back-of-the-envelope computations of quantities and dollars, a vague sense of other environments that might be imitated or avoided, an understanding that certain codes and guidelines must be met. These will change as new information is uncovered, as wishes prove extravagant, as economics and schedules become more precise. Every facet will, at some time or another, be reconsidered including, in most instances, whether to proceed with the project at all. The programmer's role is to make sense of the situation and chart an orderly process of reaching decisions.

I

Programming is a heuristic process: tidy decision trees are seldom useful, since what is to be decided usually only becomes clear as the inquiry proceeds. A better model is that of a series of sketches of the eventual environment, each of which becomes more complete as the process progresses. The subject is the same, but each sketch emphasizes different details. Each will be added to or may be redrawn completely. But, to start, we need themes for each and some notion about what media to use.

Most programming processes are aimed at sketching responses to four sets of issues:

The overall ENVIRONMENTAL PACKAGE--what is to be included, how it

is to be financed, how it relates to what exists or might be done

in the future, how it meshes with the institutions which will

build or inhabit it, what the schedule for actions should be.

The ENVIRONMENTAL PATTERNS to be incorporated in the design--

specific notions about spatial relationships or configurations,

sometimes in the form of analogies, sometimes held only meta-

phorically, and at other times in the form of partial design

solutions, abstract or precise.

The PERFORMANCE REQUIREMENTS for the qualitative dimensions of the

environment--how it is expected to serve its occupants in behav-

ioral, operational, or maintenance terms.

The sense of CLIENTSHIP--who the principal groups of users will be,

how they might regard the environment, what typical routines of

use might be, how users might shift over time.

Not every programming project deals equally, or adequately, with

each of these issues. One may demand the bulk of attention, but at the

very least, assumptions must be made about the others. For example, in

formulating a new set of zoning standards, the principal emphasis may well

be on performance specifications. The programmer, however, will have in

mind certain environmental patterns he wishes to encourage, and may test

the specifications by examining what environmental packages would be pos-

sible on particular sites if such requirements were enforced. He will be

making, consciously or unconsciously, a set of assumptions about the im-

portant clients who are to be served and about their behavior. Architec-

tural programs typically concentrate on environmental package issues, but

if they fail to include details about patterns, performance and client-

ship, much of the real programming effort will fall on the shoulders of

those involved in later design. Good programming practice involves cycl-

ing through each of the four sets of issues.

While it is convenient to think of packages, performance, patterns and clientship as discrete categories of information for the purposes of an analysis, the four are, in reality, intimately linked.
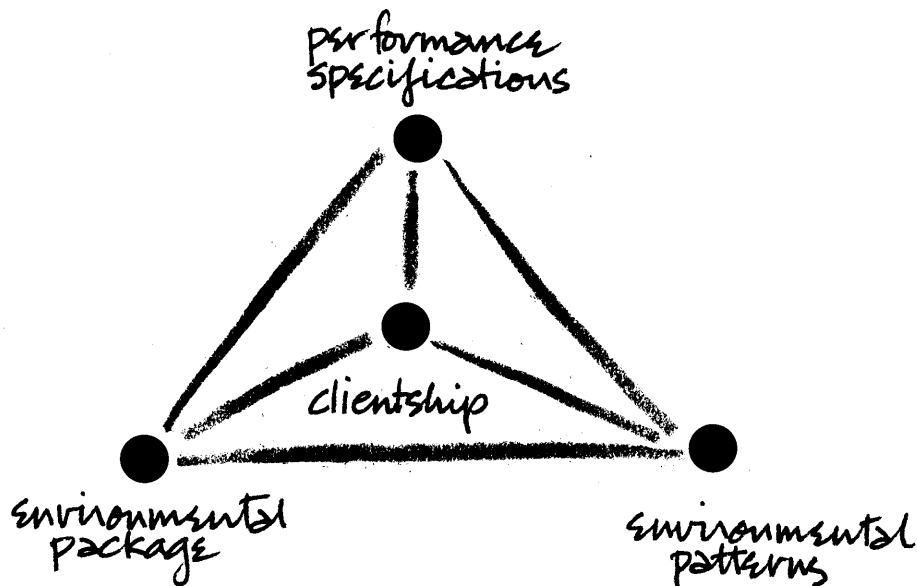
Several examples will illustrate. In the programming of Chandler Village (see Chapter 3), the environmental package prescription was for student living units which would accommodate a range of group sizes, from single individuals to large communes. The decision flowed directly from the programmers' understanding of their diverse set of user clients--the social relationships they might seek, the college's desire to have living also serve educational purposes. But abstract packages of space do not automatically result in a good environment; several patterns needed to be expressed about how such spaces should be related. The location of units

within the complex was important: entry hallways could be shared among
groups of generally similar size, but the largest and smallest units
ought to be isolated. The internal arrangements of units had to differ
according to group size. And underlying all of this was a set of implied
performance objectives, including the central intention that the housing
should be designed to foster social relationships of students outside the
classroom, as a way of reducing the isolation of students in a predomi-
nately commuter college.

foster social relationships
(performance)

diverse students seeking to explore
living styles (clientship)

units of six different
sizes (package)

entry and internal
arrangements (patterns)

Chandler Village
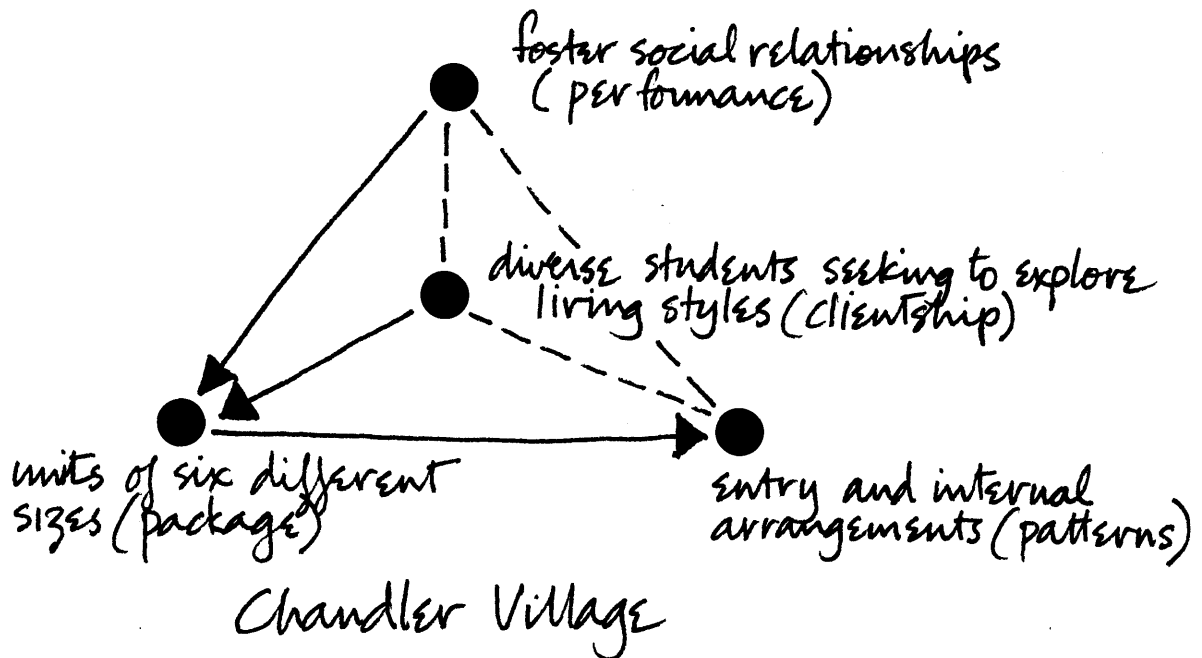
The design of Warren Gardens (see Chapter 2) illustrates how deci-
sions about pattern issues—in this case an early decision about the hous-
ing type—foreclosed other pattern options and eventually restricted the
clientship, set dimensions on the overall package, and influenced how well
the housing would perform. Once it was decided that townhouses should be

built, with private ground-level access to each, a limit was set on the

overall number of units that could be located on the site (and hence,

the per-unit site cost). A split in the maintenance of open spaces be-

tween tenants and management (mandating constant project operating ex-

penses), was a further consequence of the decision. Townhouses were

chosen initially to serve a particular client group, low-income indivi-

duals with large families. Several assumptions about housing perform-

ance weighed heavily in the favor of this housing type: that young chil-

dren playing outdoors should be visible to, and within quick reach of,

their mother in the kitchen; that units should have individual identity;

and the like.

young children playing outdoors should be visible and under supervision of mother in kitchen (performance)

need for housing for large low income families (clientship)

site capacity, site costs per unit, operating expenses (package)

build townhouses with individual entries (pattern)
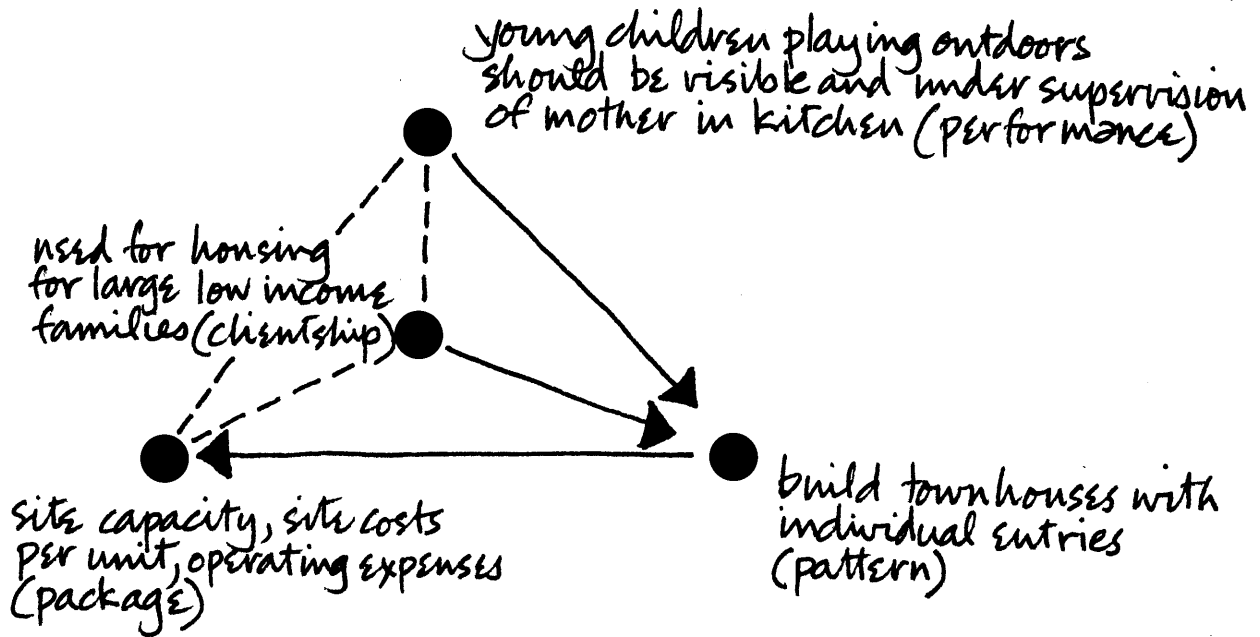
Warren Gardens

In the case of Warren Gardens, programmatic decisions were made during the design process. As work progressed, there was increasingly less opportunity to reconsider decisions, which proved to be the source of great difficulty. Because of the site costs for townhouse development and the rentals which could be expected, many small units needed to be added later in the design to increase annual revenues. For these units, other housing patterns might well have been more appropriate. It is never possible to completely predict the consequences of early decisions, but stopping to take note of potential problems and the options being discarded makes it easier to retrace the process.

If environmental packages, patterns, performance specifications and the sense of clientship are so intimately intertwined, why is it useful to think of them as separable lines of inquiry? One reason is that the sources of useful information are quite different. Package issues usually revolve about concerns over economics, construction costs, organizational arrangements and timetables. Pattern questions suggest a look at precedents, with a different eye, seeking form relationships and design ideas that are worth incorporating. To specify performance requirements, the programmer must come to grips with the level of satisfaction expected of an environment, making choices between those objectives which are most critical and those others which may be only minimally satisfied. Thinking carefully about clientship will surface questions about whom the environment is principally intended to serve; he may be encouraged to contact prospective users or people like them to understand what concerns them most. Taken together, the four categories

can serve as a useful device for parcelling the investigation, and as a convenient way of structuring the information obtained.

II

In the attempt to obtain consensus on what to build or change, the programmer and his clients must make choices; they cannot endlessly reconsider all possible packages, patterns, levels of performance and alternate clients. Yet choices in one area will limit options in the others. Knowing when to decide is essentially a problem of understanding the consequences of deciding wrongly.

One useful technique in exploring decisions is to fix assumptions about three of the variables while exploring the options available in the fourth. For example, the programmer may make assumptions about clients to be accommodated, the level of performance desired, and the essential patterns to be incorporated, and then explore the possible packages which could result.
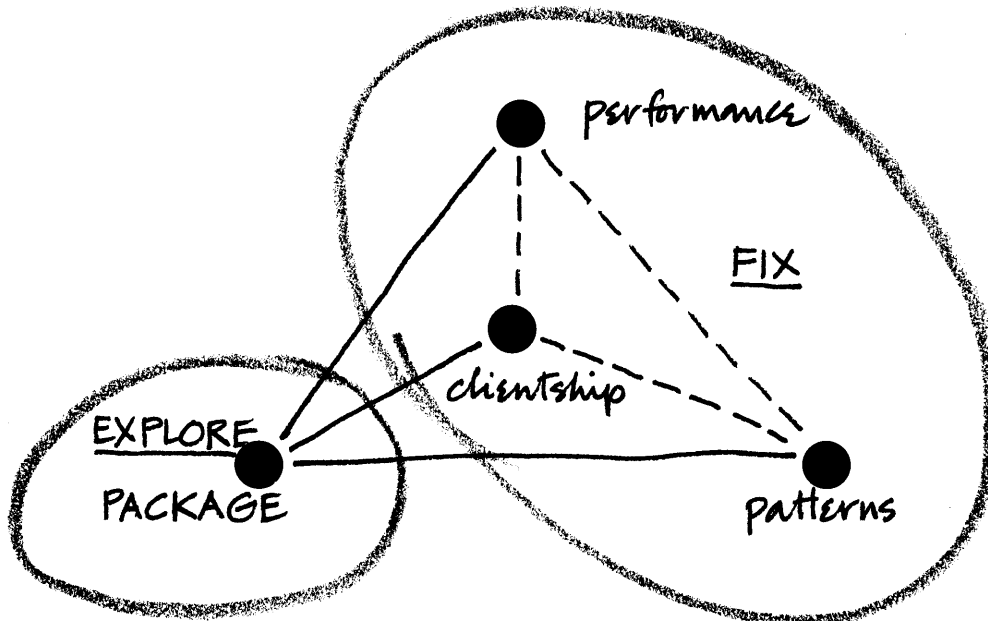
A commercial developer frequently does just this. When considering whether or not to build a rental office building, he may assume from his experience a market (clientship), the type of office floor arrangements that would be desired, the necessary parking, construction and maintenance standards, and then explore the possible development packages that could be created on a site. Later, especially if the result is unfavorable economically, he may reopen several of the questions, asking: Could I find a particular client that would be attracted here? Can I make other arrangements on parking? Can I get a zoning variance to allow me to build new space? What if I built smaller floor areas? And so on.

Urban designers of the Urban Design Council of New York used such a strategy in deciding upon performance specifications to be included in their Housing Quality Program. With a first draft of performance standards in hand, they focused on the kinds of housing patterns which could be created on sites, making assumptions about the standard package of space permitted under existing zoning, and typical financing arrangements, and (implicitly) the kinds of user-clients who would seek such housing and the builder-clients with whom they would be dealing (1, next page).

They carefully disected real and hypothetical examples of housing development, to discover which patterns would or would not be allowed with their standards in force. In turn, they then adjusted their performance specifications so that the most desirable patterns would be in compliance (2, next page).

Finally, in a third stage of programming analysis, they re-examined package issues by exploring with developers whether the types of housing

FIX

draft performance specifications
(HQP)

assumptions about
user and builder
clients

EXPLORE
PATTERNS

zoning space package,
typical financing
arrangements

Housing Quality Program Analysis - 1

REVISE
PERFORMANCE
SPECIFICATIONS

assumptions about
user and builder
clients

FIX

zoning space package,
typical financial
arrangements

desirable housing
forms (patterns)
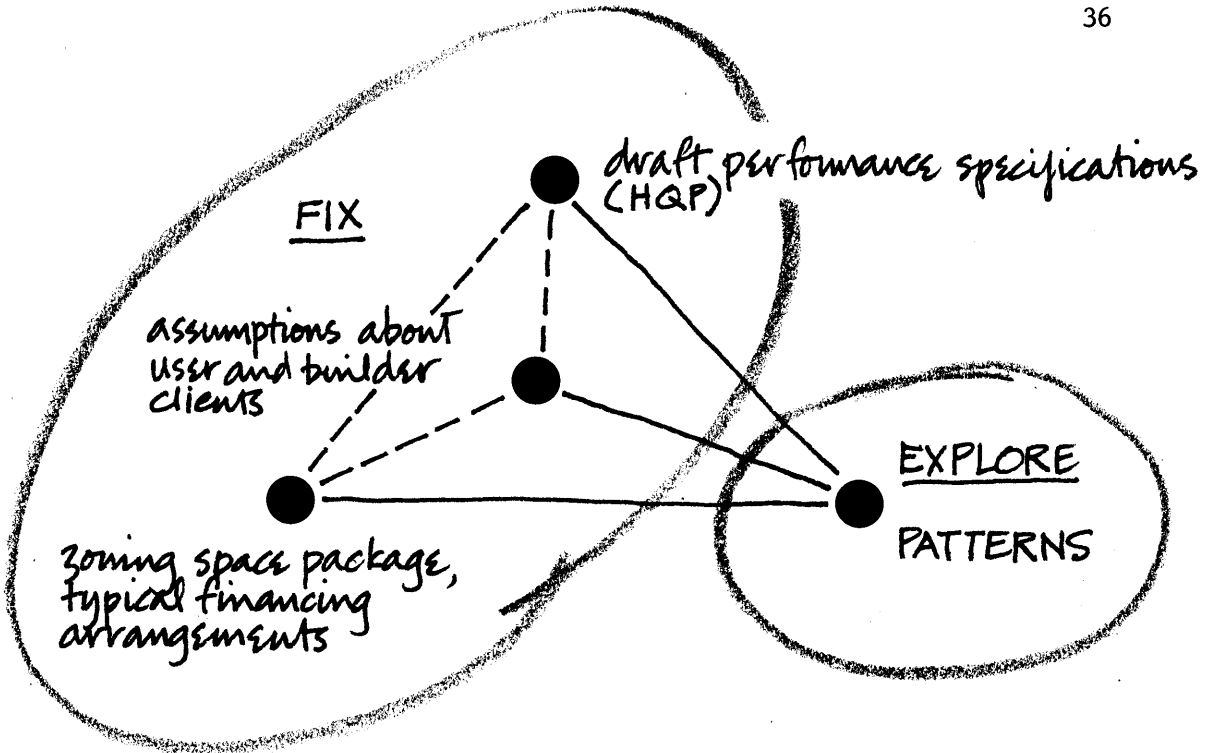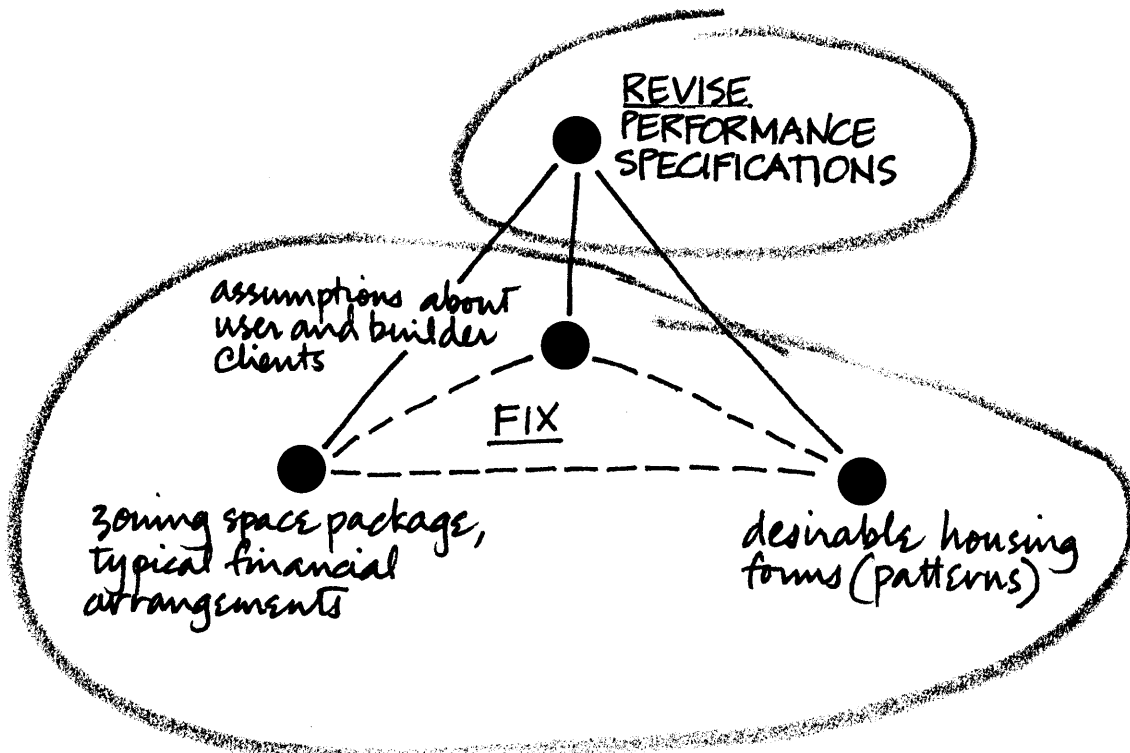
Housing Quality Program Analysis - 2

which met the Housing Quality Program performance specifications were
financially feasible, given the market it would be expected to serve.

There is no single rule to help decide which aspect to focus upon
first; each project will suggest its own priorities. Where the problem
is unique, the entry point may not matter since the process may involve
several successive cycles through the four sets of issues. But it is
important that the environment be viewed from each of the four vantage
points. Too frequently, developers ask only package questions, designers
ask only pattern questions, regulators deal only with issues of perform-
ance--neglecting other kinds of choices which could result in more unique
environments. One of the programmer's roles ought to be to broaden the
inquiry.

Programming, like any directed activity, has a rhythm which re-
quires closure at some point, in order to act. A board must put its
stamp on and commit funds to a building project, or a zoning ordinance
must be adopted into law. How does one know when to stop? One test is
internal consistency: Does it seem possible that all four kinds of tar-
gets can be achieved in the action to be taken? Or are there still con-
tradictions: Will the packages allowed with certain zoning performance
standards be likely to attract developers? Will the housing patterns
require wholesale changes in user behavior? The external world also
urges closure. Fixed dates are mandated for decisions. Fees are not
inexhaustable, for at some point the price of acquiring more information
to be more certain outweighs the risks of immediate action. Usually,
the question is not "when to stop", but rather "how much can be done

with a budget that is too small and a time that is too short.

IV

Recording has great virtue in any programming process, even pre-serving successive drafts of the eventual program. Much valuable infor-mation is often lost because it goes unrecorded in the programmer's head. Personnel change. There are often lengthy delays between programming and later design. There may be a need to retrace steps in the process because of shifts in variables once thought fixed. Moreover, evaluation is the counterpart of programming, and if we are to learn from completed environments, there must be a way of recalling intentions and the pre-dictions which were made during programming.

Chapters 4 through 7 examine separately each of the four types of prescriptions for environments. The emphasis is on techniques which can aid in uncovering essentials on ways of communicating results to others who will depend on them. But first, two examples: how early design decisions are made with and without a conscious programming process.

CHAPTER 2: DESIGNING WITHOUT A PROGRAM: WARREN GARDENS

Designers are often faced with a situation where much of what may be called programming is intertwined with the process of actually producing a design. There may be many reasons for not investing in a structured programming process at the beginning. No one may be willing to pay for it (which is another way of saying that the people with the purse-strings don't expect a large enough return to them to make it worth the investment). The context or building type may be thought to be clearly enough understood so that a fresh look at the basis for the design is considered unnecessary. The timetable for producing a design may be too short, creating pressures to begin formulating a design quickly. Or simply, the benchmarks of project success may have nothing to do with its actual performance in human terms (the architect may have in the back of his mind how well it will photograph, or the hope that it will be better than his previous work; the developer may read success as the bottom-line return; a public agency may be obsessed with getting housing--any housing--out of the ground; etc.). Some mixture of these motivations prevails in most projects, since the vast majority of design begins without more than a sketchy outline of intent. But there are hazards involved in operating from shifting ground, as we shall see.

I

Warren Gardens is a middle-income housing project for 228 families located in Roxbury, the most deteriorated area of Boston. (See plans and photographs in Figures 1-3).[1] The land for the development was
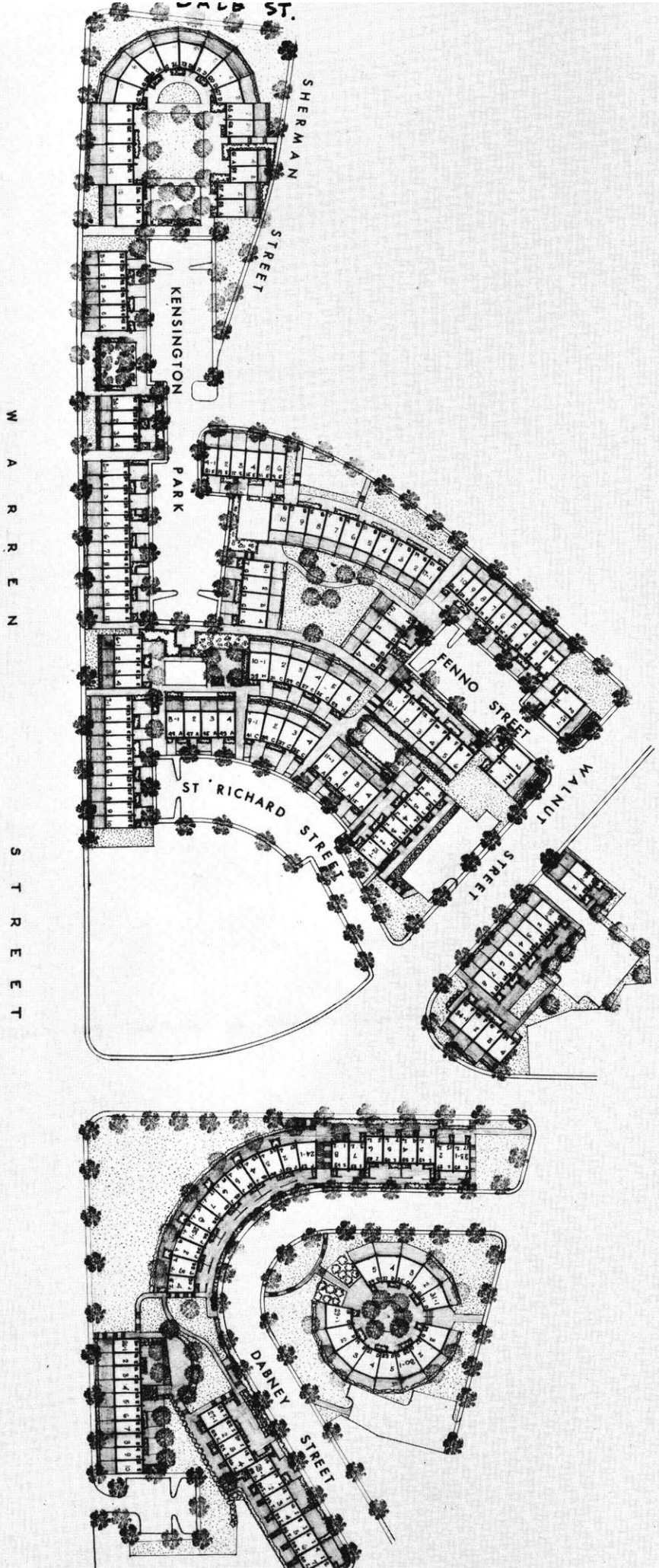
Figure 1 –

Site Plan, Warren Gardens
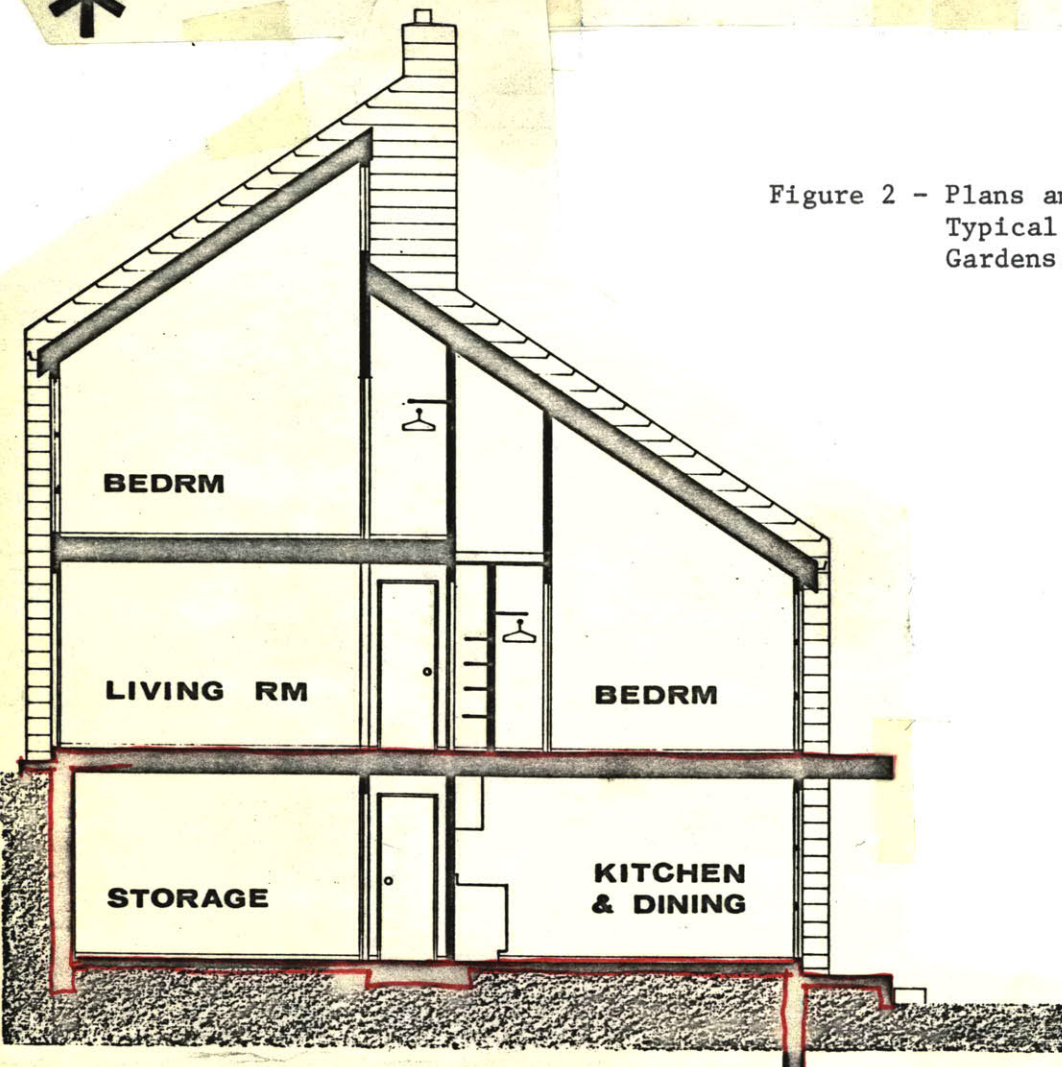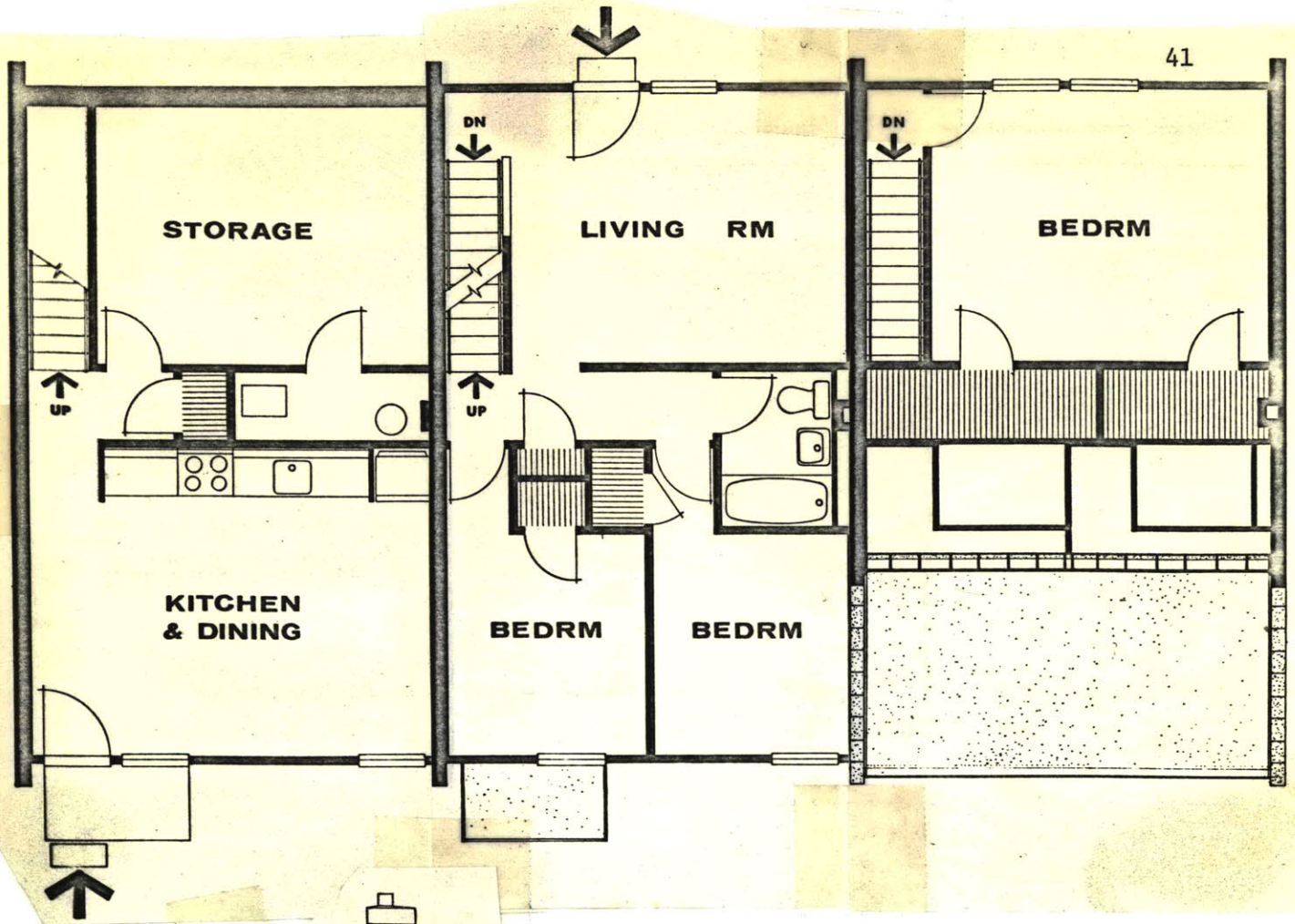
Figure 2 — Plans and Section of Typical Unit, Warren Gardens.

Figure 3 -- **Photographs** -- Warren Gardens

cleared as part of the huge Washington Park Urban Renewal Project, at a time when Boston's redevelopment program was turning from wholesale clearance to a more balanced combination of selective redevelopment, rehabilitation and conservation. Several housing projects were under construction by late 1964, when the first design studies for Warren Gardens began. Although it was originally slated for sponsorship by a church-based group, Edward Logue, the then-director of the Boston Redevelopment Authority (BRA), was experiencing great difficulty in getting the project moving. Finally he turned to private developers for assistance, appealing for a social commitment on their part. This led to the creation of the Beacon Redevelopment Corporation (later to become Warren Gardens, Inc.), a non-profit organization created to produce experimental low-cost housing. William Furlong, its executive director, sought Hugh Stubbins as his architect, an individual with broad experience in housing design and, not incidentally, a member of Logue's Design Advisory Committee. At the time, Stubbins was overcommitted and he suggested that a joint venture be mounted with two former assciates, Fletcher Ashley and John Myer, who had recently begun a practice of their own. The three became the principal designers of the project and devoted their best efforts to make Warren Gardens an exemplary housing area.

But there were to be frustrations. Almost five turbulent years passed from the time first lines were put to paper until the project was occupied. Nearly two of these were consumed by a dead-heat between rising construction costs and efforts to pare down project details. Each month meant juggling the finances of the project to bring it in at a feasible cost. Even after construction began, natural disasters (a row of party walls

blown over and extensive roof damage from a windstorm), vandalism (fires

in some of the units), and tenacious opposition from sectors of the com-

munity meant lengthy delays. These will not concern us here except to

the extent that they might have been allayed by focused programming during

the early stage of design. Our concern is on how aspects of environmental

quality became determined; in short, how did the process shape the design?

In 1970, Warren Gardens was chosen for an A.I.A. National Award of

Merit and the following year was the recipient of Architectural Record's

Award of Excellence for Apartment Building Design. Yet, after its opening

Douglas Smith (a partner of Stubbins' who joined Ashley and Myer and over-

saw the construction of the complex) noted:

> "In the light of recent white press 'acclaim', it seems doubly
> important to set the record down lest we begin to believe our clip-
> pings...Let it also be established as a given that the art and need
> for user research was an unrecognized...in the field of publicly
> supported low cost housing. While the BRA organized some explanatory
> liaison meetings at the time it purchased and cleared the land and
> the architects did attempt some local understanding--the truth is
> that the real sociological needs of the user (were) missed or mis-
> construed to a degree that is becoming increasingly clear. What-
> ever commitment to a good Roxbury environment existed--and it was
> strong--it was put into action based on a middle class white frame
> of reference..." 2

Some of the bite of Smith's self-criticism is evident today by visi-

ting the project. The dominant impression standing on the site is that

a real gap exists between intent and actuality: vast areas of embank-

ment have been eroded, sometimes by paths which are more direct than the

stairs provided; tenants have attempted to personalize the refined, uni-

formly monochromatic building facades by painting entrance areas in

bright colors and crowding windows with marks of their identity; neat

back yards have gone to weed while low brightly-colored picket fences have been erected in the front to bound personal outdoor space. To be sure, the project suffers from an almost complete lack of maintenance, especially in the city-owned streets and parking areas[3] The impression is not helped by the fact that the project sits in a wasteland of abandoned old and new structures (vandalized half-complete infill housing left by a bankrupt developer), projects which never materialized (a city park, a day-care center in a key corner location) and projects which haven't worked (an adjacent shopping center now heavily armored and occupied half by public agencies). And clearly, failure is easier to detect than success; there is evidence that the internal plans of units work well. The purpose here is not to assign an overall "grade" to the project (a much more detailed follow-up study would be necessary to determine with certainty what has or hasn't worked), but to understand how it evolved and how intentions and actuality could have been made more congruent.

II

The design for Warren Gardens was based on the past experience of those involved, the exigencies of the situation and the best reading of the user-clients that could be made remotely. No attempt was made early in the project to summarize formally all of the programmatic requirements. Indeed, no single individual was in possession of all the information that such a program document might have required.

William Furlong had most of the data related to packages, at least from a financial standpoint. He had made a cash flow analysis based on

assumptions about building costs, unit size and composition, arriving at estimated rental levels for different types. Stephen Diamond, the project supervisor at the Boston Redevelopment Authority, had ideas about zoning and unit composition, and was prepared to plead some pattern issues based upon urban design objectives, views about likely user desires, and anecdotes from prior housing in Washington Park. Stubbins, who had designed some of that housing, brought an additional set of ideas about desirable patterns and details. Building codes set implicit performance standards and thereby constrained the number of possible patterns. The Federal Housing Administration review staff was charged with enforcing a detailed set of development standards and could, through the valuation policies it chose to apply, have an important impact upon the final shape of the housing. And the architects, Ashley and Myer, each had a loosely-formulated agenda they wished to thread through this maze, and see accomplished in the housing. A host of meetings which reviewed the evolving design were the mechanisms by which a program became set in place.

In November 1964, at the start of the process, a letter from Furlong to the architects provided the architects with a directive in a series of eleven points:

1) The development was to meet FHA minimum property standards, and applicable requirements of the 221d.3 program through which it would be subsidized.

2) The building costs would need to be kept below $12.00 per square foot in total.

3) The density should be as high as possible "commensurate with good design and cost criteria."

4) The installation of streets, parking areas and lighting, and their eventual maintenance, would be the responsibility of the City of Boston.

5) The units were to be designed with a view towards proto-
typicality for possible future projects of Beacon.

6) "Within the structure of this directive," Furlong wrote,
"we expect you to use complete freedom of design. In fact,
our chief purpose in this venture is hopefully to bring the
best architectural thinking to this challenging problem."

7) "The character of the development is to be almost exclusively
housing for families. Therefore, provision must be made for
children, although no major play facilities are authorized
by us."

8) "It is understood that the structures will require second
or third class construction, probably not exceeding three
stories in height."

9) The preliminary estimate of unit composition was to be 10%-
1 bedroom, 20%-2 bedroom, 35%-3 bedroom, and 35%-4 bedroom.

10) One parking space was to be included for each unit.

11) Finally, Furlong included "random suggestions which should
be incorporated in the design:
   a. Use garbage disposer,
   b. Protect trash in vermin-proof shelters,
   c. Use no common hallways or entries,
   d. Protect grass areas or plantings from normal traffic
      patterns or play usage,
   e. Use shatterproof exterior lighting fixtures,
   f. Use no interior doors except to bedrooms and baths,
   g. Use simple tile, preferably vinyl-asbestos, for all
      interior floors."

This list, however miscellaneous, was the starting point. Other in-
puts prior to design came from Diamond, who concurred generally with the
package outlined by Furlong excepting that "there should be no efficiencies
or 1-bedroom units, unless larger units will not fit." He urged a gross
density of "about 35 units per acre." On open space, Diamond noted:
"Larger units could have their open space on the ground; smaller units
could have a balcony or roof terrace without ground contact. Look into
parking under the units." He observed that privacy was important and

cautioned to watch the quality of fencing. "Grass and trees are a mainten-
ance problem. We need a hard-floor environment, but budget is a problem."
Finally, he estimated the subsidized rentals, based on other projects, to
be $75 for a 1-bedroom unit, scaling up to $90, $105-109, $120-136, and
$147 for 2 to 5 bedrooms, respectively.

Further requirements, including a 30-foot setback along Warren Avenue,
came from an analysis of the zoning code. Beyond these starting points,
the majority of final determinants emerged through the preparation of al-
ternative designs and by reviewing these internally and with outside actors.
Both the thinking that went into these and the reactions which they met
are instructive. Below are some examples which illustrate. The statements
of requirements are mine; in them I have tried to summarize the proposi-
tion which seemed to be underlying the decisions.

PACKAGE: INCLUDE EFFICIENCY AND ONE-BEDROOM UNITS IN THE PROJECT

The original directives from the developer and the BRA urged the skew-
ing of units towards those of large size; over two-thirds were to have
three bedrooms or more. This was a political and social decision that the
initiators thought was possible through rental subsidies. A follow-up
study on an earlier Washington Park project, also intended as family
housing, showed that fully one-half of the units were not occupied by
families but typically by a mother with two or more older working children
all contributing towards the rent. There was a general belief that the
area was fragmented socially, and that the introduction of an area where
families might remain, even as they changed in size, could provide some

stability to Roxbury.

As the project progressed, however, it became evident that some scaling down of unit size would be needed to balance construction costs with revenues. For one thing, prevailing FHA policies set a ceiling of $17,500 on the mortgage value of a unit, based on having 3 bedrooms, and this limit also applied to anything larger. Thus, the increased costs of a 4 bedroom unit would have to be offset by constructing smaller units at less than their mortgageable value. As construction costs mounted through delays and then-rampant inflation, it became a necessity to add some smaller units.

By the time requirement for smaller units became clear, designs had evolved to the point where it was difficult to incorporate them. Constructing townhouses of about three stories meant that small units had to be designed to share an area between two party walls with other larger units. Stubbins suggested that, where the topography dropped from one side of a unit to the other, 1-bedroom units might be located on the lower side, below larger 3 or 4 story units. Deborah Lamb, a project designer, noted that the 1-bedroom unit they had by then developed would not fit, since a wider frontage than that available was required to satisfy FHA minimum room dimensions. The decision was then made to design efficiency units which would fit between the walls. Two-bedroom units were deleted entirely. Later, a way was found to include 13 one-bedroom units in a new building arrangement. A total of 22 efficiency units were eventually incorporated into the project.

A comparison of the evolving unit distribution is, as follows:

	Initial Directive	First Proposal	Final Project
Efficiency			10%
1 Bedroom	10%		6%
2 Bedroom	20%	35%	
3 Bedroom	35%	40%	78%
4 Bedroom	35%	25%	6%

The effect of the adjustments made along the way on the character of the project is difficult to ascertain. Certainly the hopes of providing a significant number of units for large families had to be abandoned, and the project became occupied by predominantly moderate-sized families. This may contribute to the overwhelming number of young children and may, in turn, diminish the stability of its occupants for there is little opportunity for expanding families to remain.

PACKAGE: THE HOUSING SHOULD BE RENTAL UNITS, BUILT AND MANAGED BY INDIVI-
DUALS WITH PRIOR DEVELOPMENT EXPERIENCE, WITH THE CITY RESPONSIBLE
FOR STREET AND PARKING AREAS.

This formula, hit upon after a series of trysts with local non-profit sponsors, was Ed Logue's response to the great difficulties of getting new housing constructed in Roxbury, often on difficult sites. City construction and maintenance of roads, parking areas and street lighting was a way of reducing site development and maintenance costs; it also allowed the city to count these as non-cash contributions towards the local share of urban renewal costs. There was a desire to get housing out of the ground

quickly to show progress and the BRA was not prepared to bide the time re-
quired to nursemaid inexperienced local groups through the process of or-
ganizing, obtaining, financing, planning and constructing housing. All of
the participants saw it as something of a mission in social responsibility
to produce an exemplary environment. (Robert Morgan, Chairman of the Board
of Beacon, headed the Boston Five Cent Savings Bank, other board members
were of a similar caste.)

While the financing gyrations of the project make an interesting story
in themselves, several implications of the arrangement became obvious as
design and construction progressed. The sponsors would have to depend upon
the city to deliver its share of the improvements on time (it failed miser-
ably) and to maintain some of the key site areas (it does no better).
While rental tenants expected services, the allowances of subsidy programs
for management and maintenance of the project were paltry, and expectations
could not be met. By the time the project was occupied, Lou Niles (head of
a large management agency which customarily deals with blue-chip proper-
ties, but who had joined the venture for reasons similar to the other di-
rectors) was actually subsidizing the project to keep maintenance respec-
table by absorbing some of the overhead costs. The units were offered on the
"street" at $20,000 per unit for the project, well below the development
costs. Morgan entertained attempting the conversion to a cooperative,
beginning a year after the last tenant was in, but that too proved in feas-
ible.

Warren Gardens remains caught in a squeeze between the tenants' de-
sires to force the management to provide a reasonable level of maintenance,

and an operating budget that barely manages to keep pace with replacement,
let alone preventative care. The situation is typical of projects built
under these arrangements, and the few middle income projects which have
managed to escape the circle are cooperatively owned (St. James Homes is
an example in Roxbury) or occupied by elderly and single individuals.
While hindsight is always 20-20, could the package decisions have been
made differently? More time devoted to forming a housing cooperative or
to investigating different cost-sharing formulae might have avoided the
current situation.

PATTERN: THE UNITS SHOULD BE TOWNHOUSES, WITH DIRECT ACCESS TO THE GROUND

This is possibly the most important pattern, for most other decisions
flowed from this. Townhouses were chosen for a variety of reasons. Furlong
was explicit in directing that there be "no common hallways or entries,"
largely because of the maintenance and security problems he foresaw.
Diamond emphasized the importance of private outdoor areas. Myer was im-
pressed by the need for housing that supported "good child-rearing prac-
tices" and thought that parental supervision of young children playing
outdoors was essential. Stubbins was less committed to the building form
at the outset and believed that some mixture of housing of different
heights might be appropriate. In a phone conversation with Myer, upon
receiving an early townhouse design, Stubbins expressed some concern over
the likely cost. He suggested that they consider flats with a common
stair, "like Sert's married student housing" at Harvard, as a more econom-
ical solution. Myer remarked that "the problems of safety and control may

throw out the common stair idea."

Beyond such brief discussions, unit types other than townhouses were never explored in depth. Doug Smith described the dilemma the designers found:

> "First let it be clear that the economics opted for high-rise which the owner in his wisdom rejected as an improper solution to family housing. However proper that decision was, it immediately made the necessity of other sociological trade-offs imperative." 4

Some of these trade-offs included the eventual need to incorporate smaller units into the project (using a building form that was inappropriate for them) and, most probably, the necessary use of inexpensive construction materials, which compounds maintenance difficulties.

PATTERN: PROVIDE A CONTINUOUS ROW OF HIGHER (THREE- OR FOUR-STORY) STRUC-

TURES ALONG WARREN STREET

This pattern flowed from considerations of the urban design of the area in which Warren Gardens is located, but eventually had an influence also on the internal design of units. The Washington Park renewal plan called for the upgrading of Warren Street; it was to become a major artery and an important pedestrian route to a new shopping center under construction on an adjacent site. The desire to reinforce the edge of the street was evident from an initial design meeting:

> "MYER: Do you prefer large or small parking areas?
> STUBBINS: Small blocks and close to the entrances...We must keep in mind the appearance of the area from the outside. This project is to illustrate the best way for planning such a development.
> MYER: It is important to conserve the form of the streets...

ASHLEY: The parking areas shown on our studies right now are
           too large. However, would not smaller ones add to
           drives and street breaks, etc.?"

From then on, site plans always showed a line of structures along Warren.

The desire was to keep breaks in the street wall to a minimum, although

blocks of units were slightly offset to avoid monotony. When the row of

houses reached Dale Street, a problem was how to end the run without dis-

rupting the continuous perimeter. Such a disruption would result if end

units were placed at right-angles to Warren Street, because of yard re-

quirements. Stubbins recalled a project in Washington where that condi-

tion seemed to be handled well:

"STUBBINS: How did Chlothiel Smith solve the problem of turning
            corners?
MYER: She might have negotiated something with the FHA...
LAMB: The 20-foot front yard per unit is required by the
            Boston Zoning Board and not by the FHA. The Washing-
            ton Zoning Code might be different..."

Their ingenious solution was to turn the units in an arc with no break at

all. This resulted in pie-shaped housing units, an idea which was emerg-

ing from another site design problem--how to produce standardized units on

a second fan-shaped portion of the site which sloped down from a prominent

knoll. By remaining at a relatively level elevation, with the party walls

perpendicular to the contours, the units could serve as retaining elements

allowing (as I have noted) two grade entries at different levels for

stacked units.

The desire to heighten the definition along Warren Street was one of

the factors which entered into the decision to use steeply-pitched roofs

for some units (although probably not the most critical factor): Stubbins

observed "the sloping roof makes sense because it makes a pleasant silhou-

ette and has a traditional sense of cover." The resulting units were not

without their problems, as Doug Smith reflected:

> "Special effort and expense was expended to include high
> (three story) homes along the major perimeter avenues to provide
> continuity and transition of scale, only to create "attic"
> living of doubtful fire safety. (Parenthetically: The issue
> of fire safety was among the most prominent of the grievances
> of neighborhood spokesmen in the conflicts which accompanied
> construction. It touched a sensitive nerve among low income
> Roxbury residents, accustomed to arson in the dilapidated frame
> structures which predominate in the area.) (The designers who
> saw) these third-story "studios" as opportunity spaces for im-
> promptu experiments in three-dimensional living overlooked the
> tenants' lifetime habits."

The issue raised is that of adaptation: may a designer introduce opportun-

ities which the users have never experienced?

Finally, an outgrowth of the decision to locate a row of structures

along Warren Street, and the concomitant decision to turn the entrances

away from the street was the necessity to construct sturdy walls bounding

private yards along the street to assure privacy. These walls, of grey

concrete block are highly visible and later became a source of contention

as they were interpreted as second-class quality for a residential environ-

ment (see discussion below).

PATTERNS: LOCATE KITCHENS ON THE ENTRY SIDE OF UNITS OVERLOOKING THE LIKELY
HARD-SURFACE PLAY AREAS OF YOUNG CHILDREN. LOCATE PRIVATE YARDS
OFF LIVING ROOMS ON OPPOSITE SIDE OF HOUSE.

The question of on which side of the house to locate kitchens--and its

counterpart, where living rooms should be located, since the narrow frontage

of the traditional townhouse form precludes both rooms from being at ground

level on the same side--consumed much discussion, negotiation and atten-

tion of the designers. The patterns emerged from notions about child-

rearing, how private outdoor space might be used and the impressions

families might like to project to visitors.

Early in the project, Stubbins threw out the notion that both living

room and dining area might extend through the depth of the house, as they

did in a project of his which he thought was successful in suburban

Wellesley. As the units evolved, this became impossible since the narrow

frontage was enough for only one room. The issue became on which side to

locate the entrance:

> "MYER: We now have too many alternatives. We need the advice
>   of a mechanical engineer and to talk to the local
>   people to decide on one. The issues are...whether the
>   kitchen is one room divided into separate dining and
>   food preparation areas...
> STUBBINS: Going through the kitchen from the dining room to the
>   living room is not easy.
> ASHLEY: (Having the kitchen in the center) has structural and
>   mechanical advantages and the division of space may
>   be more convenient for families with kids.
> MYER: I like to have the kitchen and dining table together.
> ASHLEY: One may need to put the kids away from the parents,
>   in the dining area versus the living room."

Based on further thought and discussion (but not the user-consultation

Myer would have liked), the first pre-preliminary proposals indicated a

combined kitchen and dining space at the front of the house, with the

yard visible to a mother from this space and a living room at the rear.

This was an unconventional arrangement and serious opposition developed

when plans were reviewed by federal officials. Project notes record:

> "J. McGrath, upon reviewing the drawings, believed that the
> kitchen, as it is to be on the entrance side of the house, should

have some type of screen separating the entrance from the kit-
chen. This screen is to be of some substantial material that
would screen the sight line from the main entrance, directed
towards the counter area of the kitchen. Mr. McGrath believed
that the main entrance, on the kitchen side of the house,
should be reconsidered."

Myer's explanations and the later addition of a screen, eventually won

the approval of a skeptical agency.

There was less firmness in the minds of the designers about how to

treat the private yards, which by now had been located off living rooms

on the opposite side of the house. The possibility of neglect and the

uncertainty of how the yards might be used were at the root of the prob-

lem. All could agree that the yard should only be one step down from

the living rooms. They debated ground surfaces:

"STUBBINS: I favor the pea-stone idea. This would allow tenants
to set in flower pots or even grow a tree if he wants.
MYER: I favor stone-dust, because children cannot use this
material to throw as missiles.
ASHLEY: Gravel is the best and cheapest material. Grass is
next but this is not as easy to maintain.
MYER: Pea stones can't be used. Crushed stone should be
used instead.
STUBBINS: It should be a surface which is not grass or mud. It
might be good to try gravel and see how it will work.
ASHLEY: It might be good to provide a planter for each unit.
People can plant their own things if they like to."

Crushed stone was the outcome, and what influence the sparse appointments

of yards have had on their use is not clear.

Today, there is enormous variation in the attention given to, and

in the use of, private open spaces. They range from carefully manicured

lawns, planted by the tenants, to a repository for objects too large or

too unsightly to be kept indoors. In many of the same units where yards

are unused, picket fences have been added to the fronts of units to cap-

ture an additional area of private space on the kitchen side of the house.
Could this variability have been provided for in the design, if they had
known more about residents' preferences?

PERFORMANCE REQUIREMENT: THE EXTERIOR APPEARANCE OF UNITS SHOULD HAVE THE
                         SIMPLE DIGNITY AND UNIFORMITY OF NEW ENGLAND DOMESTIC STRUC-
                         TURES

This decision, a mixture of the stylistic and practical, is among the
most contentious of the project. Nothing in the client's directive urged
that the structures have a specifically regional appearance, particularly
the one chosen, but the view was apparently shared by all involved in the
design.

At an early review meeting, minutes record Stubbins as noting:

> "Units should have a minimum of glass to enable continued con-
> trol of the exterior appearance of structures. We may need to use
> double-hung windows extending, if necessary, from floor to ceiling.
> Units should have a solid instead of a transparent outside. Chlo-
> thiel Smith's project in Washington is a good example."

Later, reviewing a plan in which the floor-to-ceiling window pattern was
broken by the fact that kitchen cabinets were located on an outer wall,
he noted "the kitchen against the window would make trouble for the win-
dow." This attitude was repeated throughout the process, the desire to
maintain the continuous flat wall even entered the decision to tuck effi-
ciency units under larger units on the down-slope side, so as to avoid
additional breaks. Clearly, this made economic sense, but gained momen-
tum by fitting the emerging image of the project.

The resulting housing is a model of restraint: narrow clabboards
on the ends of the buildings painted a uniform light gray; white trim

framing narrow floor-to-ceiling windows; eaves which overhang only slightly;

party walls of gray concrete block chosen instead of brick because it con-

tinued the uniformity of color; slightly protruding canopies painted white

to minimize disruption of the facades. The choice of gray, and especially

the use of block, came to be interpreted quite differently by the community.

Block was seen as inferior, evident from an unsigned manifesto circulated

in the adjacent neighborhood at the height of community opposition to the

project:

> "The trouble started a few weeks ago, during one of the wind-
> and-rain storms which we experienced this spring, when one of the
> masonry (cinder block) walls dividing the multi-story single family
> dwellings was blown over, toppling into the next wall, until an
> entire row of masonry walls had collapsed like dominos...The col-
> lapse of the walls aroused a certain degree of fear and suspicion
> in the black community. People wondered, first, about the safety
> of these dwellings, and second, whether this might be connected
> with a gigantic sort of fraud, with profiteering by elements of
> the white power structure."6

While veiled here in issues of safety, a later manifesto called for

painting of block end-walls. Doug Smith later interpreted this:

> "Despite sensitive siting, clothes dryers, disposals and over-
> sized rooms, the homes do not override the compelling impression
> of economy to a people sick of second class treatment. Every
> major material, inside or out, ended up being the cheapest, least
> fireproof, highest maintenance selection possible...The clapboards,
> classic New England symbol of sturdy forbearers and goal of middle-
> class neo-suburbanites, in esthetic gray with tasteful white trim
> marches on through 228 homes, unrelieved and in solidarity, despite
> neighborhood warnings to the contrary." 7

Finally, putting a good face on what he now considers a poor decision,

Smith comments on the windows:

"One design misconception has ended well. The floor-to-ceiling windows throughout are colorful statements of tenant personality as they provide themselves with visual privacy in the lowest panels in lieu of unmanageable roller shades." 8

III

As the preceding reveals, there are a complex set of links between the various types of programmatic decisions. Package decisions (the unit distribution) had to be modified based upon pattern decisions (the use of townhouses and attendant costs and dimensional constraints). A performance decision (the monochromatic image of the project) coupled with a pattern decision (private yards along Warren Street) diluted hopes of having housing that was well received (concrete block is a prominent element of the project's image). Early package decisions (rental units and city streets) were later regretted and had an impact on the actual accomplishment of a performance requirement (high quality maintenance and refuse collection). Had these apparently predictable contradictions been examined at the outset, would other decisions have been made? Was the information the designers had to work with adequate, or might they have benefitted from other data? Who should have, or could have afforded to, undertake programming at the start of the project?

Despite the thoughts of producing a prototypical solution, the plain fact is that the project had to stand on its own feet for the paying clients. An extremely modest architectural budget meant that the designers had to rely mainly on prior experience and knowledge of prededents for behavioral and practical decisions they made. The developer's budget made

sense only if the project could be under construction quickly, hence there was no chance to pause and take stock near the start. Federal officials were constrained by rigid guidelines which were applied nationally and which left little room for tailoring decisions to local circumstances.

The one group which could have contributed substantially, but did not, was the BRA. Their circumstances were different: they were overseeing not one but many projects, and there should have been an opportunity to compile their accumulating experience and introduce it into decisions on successive projects. A panel of local residents, surrogate users, might have been assembled for the designers of several projects to consult. Scenarios of how housing was being used by local residents, either written, in photographic images or on film, might have provided an early immersion for designers into the life style of their user-clients. A pattern book, consisting of arrangements which had proved successful elsewhere would have been helpful, especially if coupled with evaluations of how well the patterns worked once projects were occupied. A more thorough-going analysis of the financial and management consequences of the packaging arrangements might have avoided some of the later trade-offs forced upon Warren Gardens. These steps might not have been costly to the project in either time or money, but could have added immeasurably to its quality. By carefully structuring the format for project design submissions (asking that certain kinds of patterns be abstracted and explained), part of the BRA's programming task might have been simplified. And by more careful tracking of how decisions about package, pattern and performance requirements were affecting each other, they might have been in a position to guide the pro-

cess, rather than simply react.

Warren Gardens speaks to the need for an <u>ongoing</u> programming capability in public agencies dealing with successive projects, none of which could alone justify detailed programming. One-time evaluations are fine, but unless there is a repository for such studies and a mechanism for bringing them to bear on successive decisions, we are confined to repeating failures and never really adopting innovations.

But there are also useful things which designers can do early in the process to avoid the conflicts which arose in Warren Gardens. Synthesizing what is known in the way of a program should be an essential step before detailed design explorations. Through this device apparent contradictions in desires may be surfaced and dealt with sooner rather than later when it is impossible to retrace steps. The program for Chandler Village, in the next chapter, is a step in this direction.

FOOTNOTES: CHAPTER 2

1. This case study is based upon interviews with project principals,
    a re-construction of events from extensive notes of meetings and
    correspondence, and site visits by the author after the project
    was completed. Specific citations are included only when they
    refer to sources other than these.

2. Memorandum on Warren Gardens by Douglas Cole Smith, August 5,
    1971, n.p.

3. For an interesting exploration of the problems of litter at Warren
    Gardens, see Randall Imai, Litter in Open Spaces of Multi-Family
    Housing Sites, unpublished Master of Architecture in Advanced
    Studies Thesis, Massachusetts Institute of Technology, 1973.

4. Smith memorandum, op.cit., n.p.

5. Ibid., n.p.

6. Anonymous publicity circulated to neighborhood residents, n.p.

7. Smith memorandum, op.cit., n.p.

8. Ibid., n.p.

CHAPTER 3: <u>PROGRAMMING AS THE BASIS FOR DESIGN: CHANDLER VILLAGE AT</u>
<u>WORCESTER STATE COLLEGE</u>

Preparing an architectural design program can uncover new information

bearing on the problem, can force all of the actors to be clear about their

expectations, and can provide a basis for evaluating the performance of the

completed environment. Most importantly, the programming process can be a

mechanism for forcing commitments and a convergence of opinion about what

to build. The image of what the environment should be may be accepted for

different reasons by different people, and the reasons may never be sur-

faced entirely. Each participant may be preoccupied by certain aspects of

the problem; they may be willing to yield to others as long as their inter-

ests are met. A good programming process ought to illuminate the linkages

between package, pattern and performance decisions, ought to clearly define

the clients for the project, and ought to provide a forum in which differ-

ences can be aired and reconciled.

This project, to program and design housing at Worcester State College,

offers insights about how the evolving informational base shaped the design

product. It illustrates that attitudes brought to the project from past

experience influenced strongly the information which was sought and used

and the design. The case study describes the programming and design history

of the project from its inception to the point of completion of the construc-

tion documents. The housing, now called Chandler Village, has been con-

structed and is occupied. Toward the end of this chapter some of the cur-

rent residents' reactions to the complex are noted. The description departs

slightly from strict chronology in order to follow streams of events. Since

the programming and more conventional design activities occurred in a
highly condensed period, there was much overlapping. A measure of con-
fusion, duplication and disjointedness must be added the reconstitute
the actual situation.

I

The charge was straightforward: design and build housing for 500
students at Worcester State College on the outskirts of Worcester, Mass.,
within certain construction cost limitations. To the State College Buil-
ding Authority, responsible for constructing and mortgaging the project,
that assignment had in the past generally resulted in dormitories. But
doubts were beginning to be voiced about that stereotype. Robert Stewart,
the Authority's Executive Director, explained that many of the "crackerbox
dorms" they had built were "turning into behavioral sinks" that students
were avoiding. As a landlord, that image struck at the Authority's pocket-
book, and they were willing to take a risk on the design of housing at
Worcester in the hopes that a better solution could be found.

Architects were interviewed for the project in the fall of 1971. The
project was awarded to the firm of Ashley/Myer/Smith (now called Arrow-
street, Inc.) in November of that year, in two stages: a firm contract to
prepare a design program, with an informal agreement to continue with
architectural services if the Board was satisfied with the outlines of the
project, based upon the program. One of the overriding conditions was that
some of the units be ready for occupancy by September of 1972. Working
backwards, that allowed scareely eight months to program, design and pre-

pare construction documents on the project, clearly a breakneck schedule. But the firm was disasterously low on work and they too were willing to take some risks. Douglas Smith, the partner who argued that the schedule could be met, had in mind shortcuts that included simple residential construction techniques and repetitive unit designs.

Part of the plan to meet the tight schedule was to begin design studies at the same time as the programming, aiming towards decision on the design soon after the program had been formally adopted. Smith had overall responsibility during hte early stages of the project and later supervised working drawings and construction. John Myer, the partner generally responsible for design, supervised the intermediate stages of work.

Other members of the firm had been developing programming methods and the project was viewed as an opportunity to test these methods. One was the Planning Aid Kit (PAK), developed by Richard Krauss for programming mental health centers, which he wished to test in a different context. Its format then consisted of a series of forms, to be filled out by those eventually affected by an environmental change, and the completed forms served as the kickoff for discussion and agreement on performance specifications for the design. Stephen Carr was midstream in the development of a process called Ecologue (see Chapter 9), aimed at enabling ordinary users of environments to clarify their environmental preferences and collectively reconcile any conflicts. A pilot run had been done in a Cambridge neighborhood and Carr wished to try the methods on a specific building project. John Myer had done other programming experiments involving the collection and cataloguing of slides depicting varieties of affectation between users

and their settings. He saw the project as a way of extending this work.

The broadbrush outlines of the programming process were conceived by Smith, Myer, Krauss and Carr in mid-December. A recent architectural graduate, Stephen Tilly, was hired to work on the programming and was immediately sent to the snows of New Hampshire, to visit and photograph housing settings at comparable small colleges. Around Christmas, I joined the staff to coordinate the process and synthesize the program document. A third new staff member began formal design studies in mid-December.

The client arrangement was typical of many programming situations. The paying-client, the State College Building Authority, had few formal ties to the user institution, Worcester State College, and no standing relationship with the students or faculty who would occupy the completed structures. The College was headed by a new president, Robert Leestamper, who had arrived that fall after service as Dean of Students at a large midwest state university. In the public's eye, State Colleges in Massachusetts are the lowest rung on an educational ladder that is topped by well-known private universities and a rapidly expanding State University system. Colleges depend upon the whims and machinations of State Legislators to meet their annual operating costs. Tuitions at the colleges are uniformly low. Worcester had recently shifted to a liberal arts college after many decades of serving as a state Normal School, the only obvious changes being a new name and a few more courses. The education of teachers remained its mainstay. Virtually all of its students live at home with their parents and are the first generation to attend college. With low tuitions it is a working-class foothold on upward mobility. Leestamper

thought that image had to be changed and high on his list of priorities was the creation of a residential campus that engaged, even stimulated, its students. He expressed an openness about the kind of housing to be built on campus, urging the architects to be an innovative as possible.

Myer and Smith also had hopes riding on the project. One was that the project get built, in contrast to their ongoing frustrations with similar housing designed with great care for Hampshire College. There they found themselves caught in an irreconcilable squeeze by construction costs that were rising faster than they could simplify the buildings and put them out for new bids.[1] But many of the ideas developed for Hampshire College still seemed valid to Myer, particularly the form of the structures (long, low, residentially-scaled) and interior spaces (with lofts and cradling roofs). Both partners resolved to work within realistic cost parameters, and Smith believed that could be done only by using standard residential building techniques and by collapsing the construction schedule.

Programming began just before Christmas when Krauss made initial contacts with a group of six students and two faculty (suggested by the Dean of Students) who agreed to work with the PAK forms. A thorough literature search was begun at the same time. Finding written materials proved no problem: college dormitories have been the subject of endless prototype studies and every college sophomore, apparently, has looked to his rudimentary knowledge of sociology for explanations of what's wrong with his dormitory living group. But there was no such information on Worcester students, since no on-campus housing existed.

In fact, the college had surprisingly little data on its students.
They knew that the overwhelming majority lived at home, that virtually all
were single and that about two-thirds were female. They suspected that
cost would be an important limitation on who would live in the housing,
although there was no real sense of what levels were affordable by differ-
ent kinds of students. Because the information on user-clients was so
scant, a mail questionnaire was drawn and sent to the entire student body
and the younger faculty. Even this was not completely reliable; many
college officials believed that the current lack of on-campus housing de-
terred distant students from attending the college, resulting in a narrow
student population. Some felt that most of the potential residents would
be new types of students attracted to the College. This difficulty is
typical of programming situations: little is known about the user-clients
who are on the scene, and there is a strong suspicion that others, who
can't yet be identified, will eventually predominate.

By the end of December, Tilly had returned from photographing college
housing elsewhere, and he began recruiting a second group of Worcester
students to be hired as student consultants for an Ecologue-like process.
Names were again suggested by the Dean of Students and a group was sought
which reflected a broad range of student types. Eleven students agreed to
participate: five women and six men. Three were freshmen, an equal number
were sophomores and seniors, and two were juniors. Ten of the eleven
lived at home, although some had lived elsewhere in the past. Married and
graduate students, which represented a small proportion of the student
body, were unable to be located. And the group was shaded in the direction

Worcester State College Housing Program
Student Consultation Process

FIGURE 4
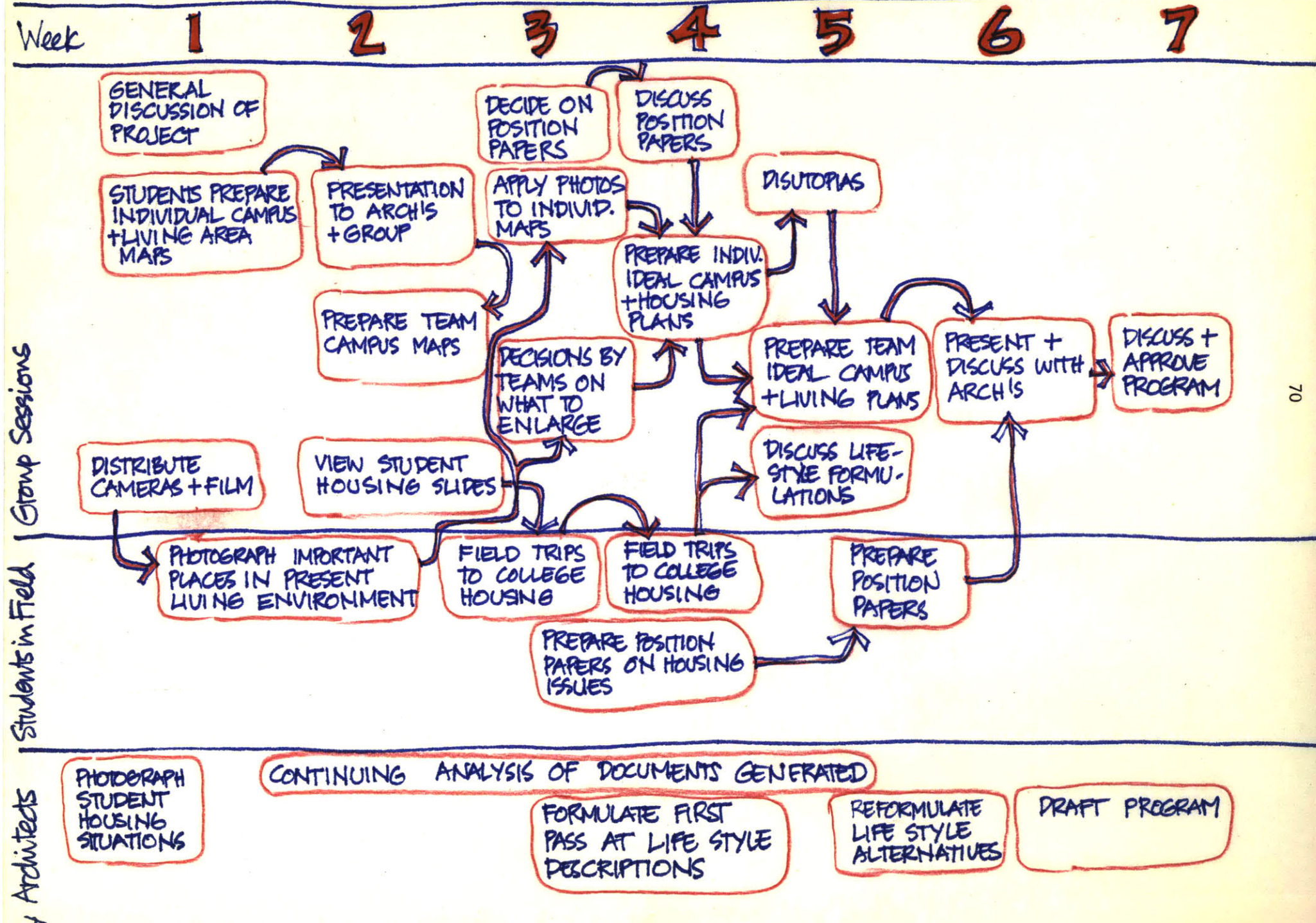
of "joiners", since all of the students had rubbed shoulders often enough
with the Dean of Students to have her recall their names.

Thus, by the end of December, five distinct programming activities
were underway or complete: photographing precedents, a literature search,
a mail quesionnaire, the PAK process, and work with student consultants.
In addition, occasional meetings with a student-faculty committee at the
college and with a working technical committee (the campus development
officer, the director of the Building Authority, and representatives of
the State board responsible for College development) were further source
of information and decisions.

II

If the user-clients seemed ephemeral at the outset, by early January
the programming team were becoming buried in the wave of impressions about
them from each of the programming sources. All the while, initial design
and site studies were raising more questions, many of which couldn't be
answered by the new information. Where should the housing be located on
the site? How should it relate to other non-residential buildings planned,
such as a student center? What was a realistic timetable for campus de-
velopment? These demanded choices or assumptions to narrow the set of
options.

Some of the choices began to emerge from meetings of the technical
committee. Its members favored the west half of campus for housing.
Earlier, several had suggested that part of the housing might be provided
in renovated units off-campus, but as energies focused on campus issues,

and as the first development schedules emerged, off-campus housing simply faded from attention (package decision). All of the organizations, including the architects, found it easier to grasp a single project than a scattered set of them.

Doug Smith made an early estimate that a maximum of 250 sq.ft. per occupant probably could be afforded in new housing of modest construction. This provided one fix for the programming, although the figure eventually proved high as the result of more precise cost information for a more complicated design than had been envisioned by Smith. This figure was presented at an early meeting of the technical committee and after comparisons to earlier state projects, approval was expressed (package decision). "How do you feel about single versus double rooms?" Robert Stewart asked quickly. The programming team was not yet ready for that level of decision. Smith expressed the view that if apartments were constructed, they had the virtue of being usable for individuals other than students, should the student market prove soft. Stewart showed interest, adding that while they had always built single and double rooms along corridors, they had been disappointed in students' reactions to them. The meeting ended on a note of openness about the type of housing units.

Most of the literature, it turned out, also centered on the issue of whether to build single or double rooms; the slimmest shred of "behavioral" evidence seemed enough to write an article promoting single rooms. Robert Sommer had presented data to suggest that one of a double room's occupants was inevitably forced to the college library or other places for study (hence the cost savings were simply shifted to other facilities).[2]

Van der Ryn and Silverstein argued that personal territory was so consistently sought that double room occupants almost always subdivided the spaces with furniture or other objects.[3] Two additional impressions emerged from the voluminous literature on student use of dormitories: most of the information was fragmentary[4] and impossible to reintegrate into a useful model of clients; and there seemed to be conflicting evidence for almost every generalization.[5]

Few authors protrayed students in a way that was wholistic enough to permit a comparison to Worcester students. One attempt at a typology, by Lunsford[6], argued that students could be classified into four broad groups: the collegian, the athlete, the academic, the professional. But the categories were meant to explain group membership and activities and it was not immediately obvious how such categories overlapped with use of living space. Discussions of campus living were equally inconclusive. One study of a new windowless dormitory in Ohio suggested that it was liked about as well as other dorms on campus. Even Van der Ryn and Silverstein were forced to admit the students who were turned away from college housing and lived elsewhere off campus were about as satisfied as their counterparts in dorms after one year. Many writers concluded with a confession that it was impossible to measure satisfaction directly, because people adapt to what they have. All of this raised doubts in the programmers' minds about whether it was even possible to discover a single kind of student room or unit that worked for all. Perhaps a better approach was to build a range of different spaces suited to different types of users.

The notion that there was no single optimal living unit was rein-
forced by what Stephen Tilly observed during his visits to other campuses.
His slides depicted an array of living situations far richer than anyone
imagined. There were: old red-brick dormitories and new prefabricated
garden apartments, hotel-like single rooms and communes, resident-built
dormitories in the woods and dense overly-furnished institutional faci-
lities, veterans houses and fraternities mixed with boarding houses and
shared town-apartments. Tilly's commentary told of the inhabitants:
"This guy never opens his blinds, he likes to be by himself." "It's an
anarchist commune, the living room's like a stage with all those slogans
behind them as a backdrop. That guy spends most of his time bullshitting
with others." "The kitchen's an important meeting space here. That big
cookstove is in the center. The students built the cabinets." "That
guy's a drifter. He crashed in that loft for a few nights."

The slides also added a new idea in the form of a new term--"living
situation"--which seemed to capture what the choices were all about. For
a commune, the ability to choose who one lives with and the freedom to
organize the ground rules (ranging from who does maintenance to how the
rent gets paid to what sexual mores are condoned) was as important as
finding the right amount and arrangements of space. But some types of
settings seemed to support only a narrow range of living situations: it
seemed impossible to imagine the residents of one of Tilly's communes
living satisfactorily in some of his dormitories. Asking simply whether
to build single or double rooms now seemed too confining a way to pose
the question (a new basis for patterns).

John Myer and Robert Slattery (a designer who joined the project later) drew another inference from the slides about the wide variation in resident involvement in shaping their settings. In some cases residents actually built the dorm, while at the opposite extreme it was almost impossible to change rooms because of painted block walls, patterned draperies, formica and plastic furniture, and dimensions too small to permit more than one arrangement. They wondered if students might be given a kit of parts to be assembled as they desired for bed, desk and storage units in rooms proportioned to allow different arrangements such as lofts (performance requirement).

The notion of providing a variety of housing types seemed to be confirmed by the questionnaire results which were accumulating during early January.[7] For example, the number who said they would like to "live in dormitories" (we assumed that they were reacting to conventional images) as opposed to "live alone in an apartment" or "live with others in an apartment" seemed to decline with increasing college experience. Freshmen sought the more shared arrangements, and seniors those that were more private. Thus, we began to view the housing as providing an opportunity for the students--most of whom had never lived away from home--to experiment with different life styles during their college years. We also detected a pattern in the ideal size of living groups: women tended to prefer larger-sized groups than men; advanced students seemed to prefer smaller-sized groups than their more junior counterparts. Differences also emerged about whether to furnish units, or whether they should have kitchens, and on the desirability of sharing bathrooms.

The survey results gave a more complete picture of the College's present students and especially emphasized the limited financial means of most students. Rental levels were critical: $80.00 per month seemed to be the point beyond which most students could not afford to live on campus, and this caused real concern since the expected rentals (based on then-estimated construction costs) were almost $90.00 per month. The issue was explained away by various devices: that people under-estimated their real ability to pay; that the college ought to consider subsidizing some of the units; and that the construction ought to be spread over several years in case there was a low initial demand (package issues). In the end, none of these approaches proved fruitful and the issue gradually gathered dust in everyone's consciousness.

Other survey results were interesting, but no immediate way was found to express their consequences, beyond adding them to the lengthy set of program notes. A large proportion of students said that they planned to bring TV's, stereos and radios to their rooms, suggesting attention to sound separation (performance requirement). Few large group recreation or lounge facilities were very popular (package issue). The management system was the hottest subject on the questionnaire; having resident "housemothers" apparently was the nightmare of at least three-quarters of the students.

However, what we thought would be a critical management issue—whether the housing units would be mixed sexually—did not appear in the questionnaire. At an early meeting on the campus, President Leestamper indicated that the issue would be resolved by the occupants themselves,

without public controversy. Later, in a meeting of the technical group, he said that he expected the housing to be mixed, although he asked that the program not discuss or make recommendations on the issue, explaining that statements could easily be misused by a State Legislator bent on cutting appropriations for the College. To our surprise, the issue was also disposed of in the first working session of the student consultants. Students who had attended the public meeting told others that the President was open to coed-living. It was discussed in a matter-of-fact way —no giggles, asides, or embarrassment—which seemed incongruous for students who, we supposed, had led sheltered lives under their parents' wings. Some said that they would probably live in rooms with friends of the opposite sex, others said that they would not; all felt that the choice ought to be available. We had some distance to go before understanding our clients.

During the first weeks of January, the user-clients began to seem more concrete, through once- or twice-weekly meetings of student consultants in the architect's office (see Figure 4 for a diagram of the process). They became young people, each with different hopes and anxieties about their future, not simply percentages of some mythical unit, the "student body." All of the students were a little suspicious of actually having an effect on the housing design. Pessimism seemed rooted in a broad view that they had been typed as second-class citizens. "We only pay $300 a year in tuition—what can you expect from that kind of college?" was one student's comment. Years of subtle reminders that they were not

attending Clark or Harvard proved to be a significant barrier to thinking freely about housing possibilities.

In the first session, students and programmers traded expectations. Cameras and flashbulbs were distributed, and students were asked to do a photographic survey of important places in their current living environment before the next weekly meeting. Students were then asked to draw maps which identified those aspects of their daily life-space, including the campus, which were meaningful or especially significant. The mapping and photographic assignments were based on a partly-tested notion that grounded proposals about future environments should stem from a thorough-going understanding of what is meaningful in ones' present settings. Maps and photographs were devices to help externalize feelings and ideas and to enable them to be shared with others. Another theory was that visual media were more efficient and richer environmental shorthands than words alone. Moreover, they were the predominant language of designers and might reduce communication gaps.

Successive sessions had student consultants making projections of ideal living environments, visiting a range of housing which seemed interesting to them from Tilly's slides, discussing and reconciling differences in opinion of what the housing should be like, and reacting to the emerging design program. Throughout the process, the informal contacts with students—getting to know how they reacted to ideas and people, sensing something about their social patterns by observing how they related to each other—often were as informative as the actual ideas they produced. Sometimes things apparently unrelated to the housing revealed a great deal
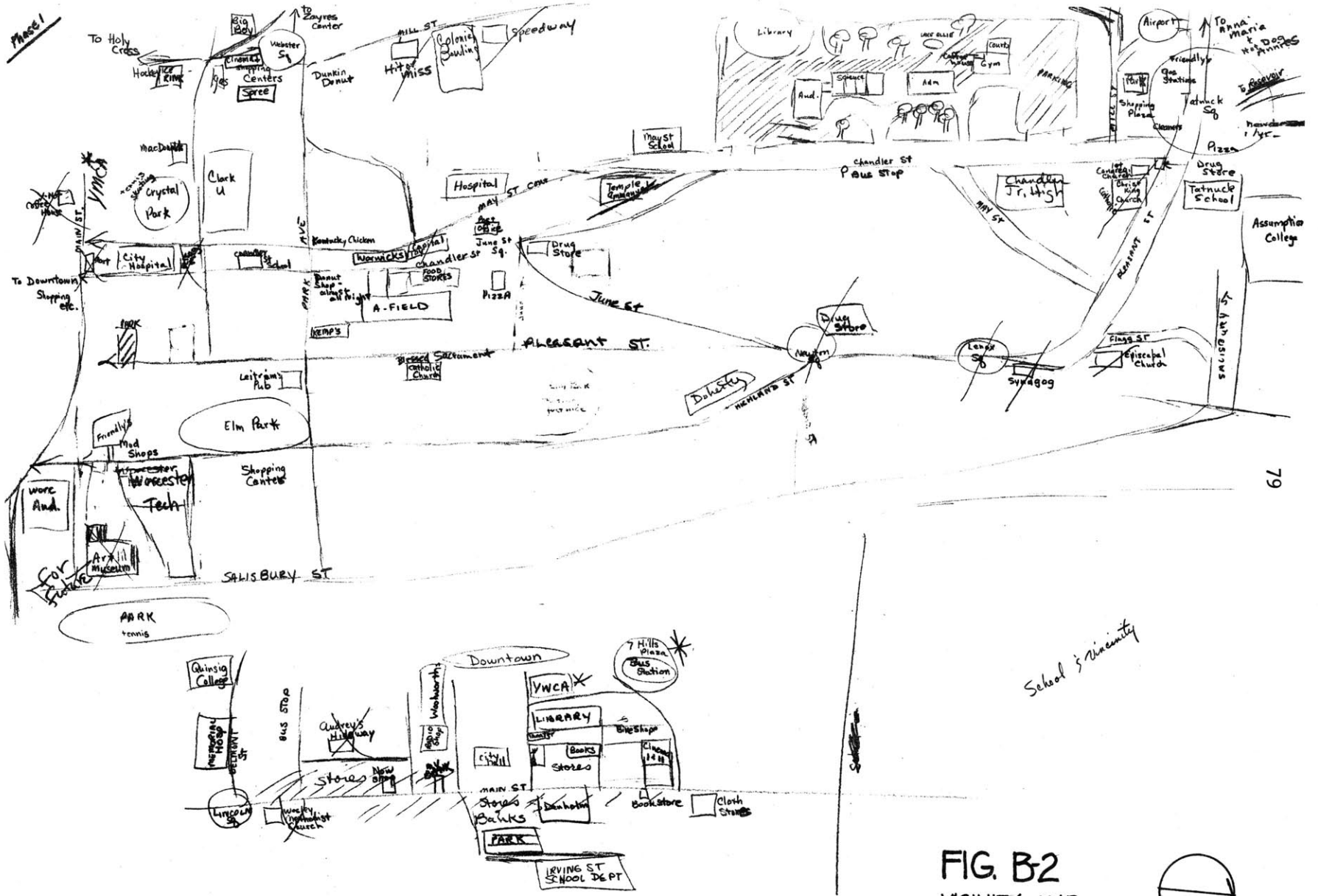
FIGURE 5: Existing Environments -- Student Consultant

FIG. B-2
VICINITY MAP
(INDIVIDUAL)

APPROX. NORTH

FIG. B-6
IDEAL CAMPUS
(GROUP: SENIORS)
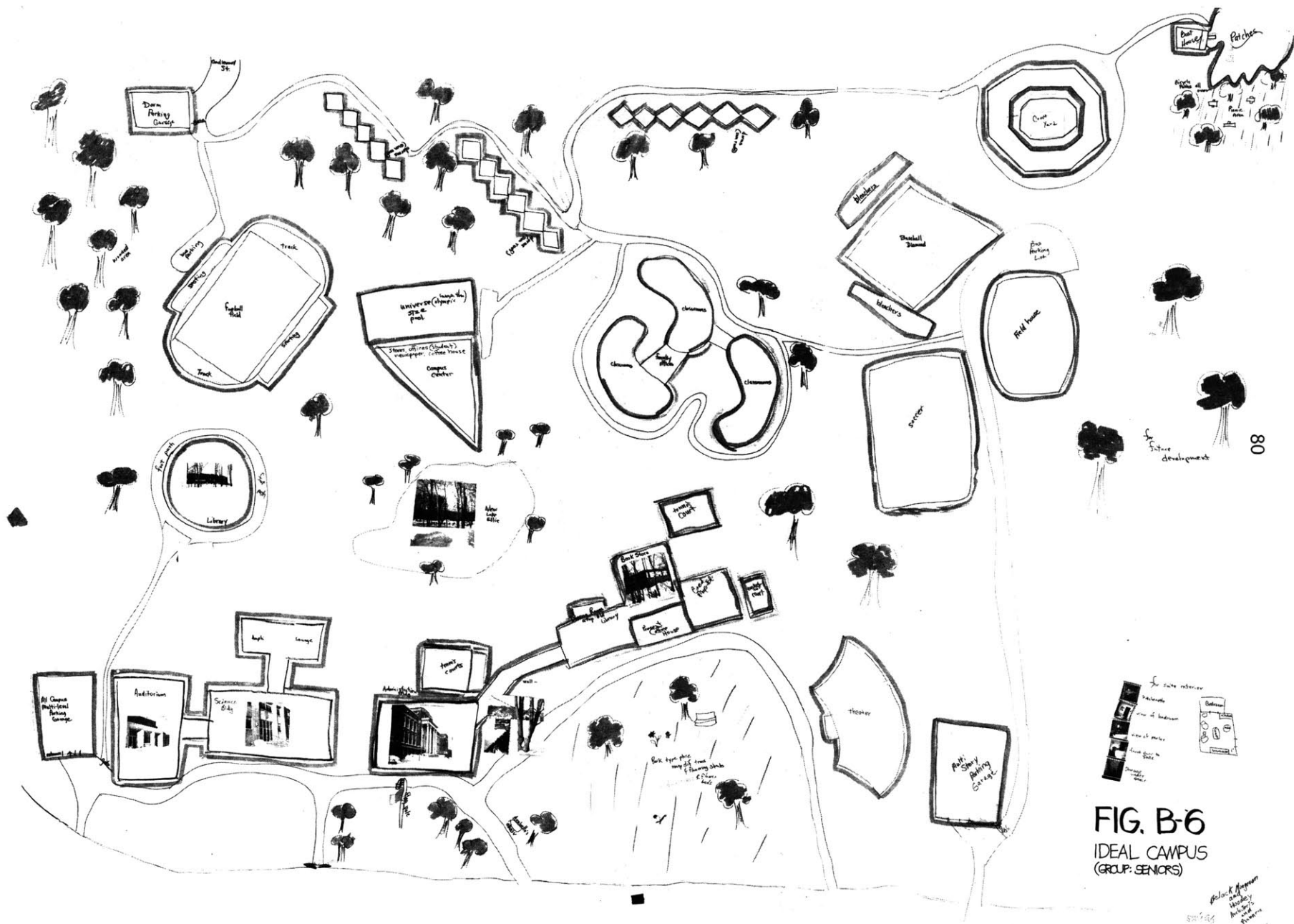
FIGURE 6: Ideal Campus Plans -- Student Consultants

about their values and life patterns. When college chapels appeared on virtually all of their ideal campus plans, we saw a new side of the students and wondered why they had never been mentioned in either official plans for campus planning discussions. The person who worked most closely with the students during the seven planning sessions, Steve Tilly, was close enough to their age to develop a strong collegial relationship.

The students' maps of their existing environments were detailed, as one might expect from people who had lived most of their lives in the city they were drawing (see Figure 5). Their world did not revolve about the campus; most students located it on the edge of their drawings as a city-dweller might locate something in the suburbs (which it was). Their drawings of the campus itself usually showed little detail. Most students simply portrayed a chorus-line of buildings along Chandler Street, with a backdrop of parking areas and uncharted woods. Indeed, several students likened it to an overgrown high school, with little identity as a place and lacking any of the social settings they had expected "college" would provide. Similarly, few of the students' photographs of good places to be were taken on the campus.

The individual and group ideal campus plans which emerged sought to change the image and day-to-day reality of the place (see Figure 6). Foremost, they wanted a "campus"--meaning a strongly-defined area of land with an organized system of buildings and open spaces. They felt that housing ought to be located some distance from the academic buildings, framing an open space which some imagined as a formal mall, others as an informal landscape (patterns). Virtually all students placed a free-standing stu-

dent center near the middle of the open space. (An architect had already been hired for the structure, the next scheduled building project.) Group ideal plans--by freshmen, sophomores and juniors combined, and seniors--carried the campus designs further and focused more directly on the environmental qualities of the housing.

Even within peer groups, students could not agree on a single housing type, and most plans included several distinct units and configurations: freshmen sought "suite-type" and more conventional "dorms"; intermediate-level students repeated these and added a third type which resembled garden apartments; seniors proposed housing that looked more like townhouses balanced by more dense dormitories around open courts. Each group prepared a montage of illustrations describing their preferred living unit. About some of the design attributes, however, the students agreed broadly. First, they thought the housing ought to be low and residential in character, preferably with pitched roofs and dormers (patterns). Second, they wanted it to partly enclose outdoor open spaces where people could meet and carry on (patterns). Third, all thought parking ought to be excluded from the immediate area of the housing. Fourth, there ought to be undeveloped woods nearby, as a relief (performance requirement).

While the student consultants were at work, other students and faculty using the PAK process were flagging a potential problem: that a rift might develop in the social patterns of residents and commuters. The PAK procedures started by trying to outline, in some detail, the problems to be solved rather than beginning with the ideals to be sought. For each problem, participants were prompted to suggest, successively, courses of action

which might lead to solutions, activities or programs which should be designed to further those courses of action, and finally the characteristics of environment that was supportive of such activities. Since participants began with presently-perceived problems, it was understandable that their suggestions would be more reflective of commuters' attitudes towards housing rather than those of eventual campus residents. Several proposals emerged from their discussions: they argued that major recreation and social facilities should be located in the student center rather than the housing, to provide a neutral grounds for commuters and residents to meet (pattern); they suggested that the housing be attractive to a wide variety of kinds of students, to increase the diversity of students inhabiting the campus (clientship); they urged that attention also be paid to off-campus housing to encourage more students to live nearby (package issue).

While the work of the PAK participants made the programmers sensitive to the impact that campus housing might have on non-residents, many of the more detailed products (such as checklists of environmental characteristics) were inadvertently passed over because they were of too fine grain for that stage of formulating the program. By the third week of January, there was much more information on the scene than the programmers were able to handle and choices were being made, often unconciously, about what to exclude from the program document.

III

A barebones outline of what proved to be the final design program
actually emerged quite early in the process. After Steve Tilly's slide
show on college housing, I asked him to make a list of all the various
kinds of housing he had encountered. This seemed to be a way of initia-
ting the discussion about what kinds of living situations ought to be
created on campus, and a way of broadening the discussion of single or
double rooms. Ultimately, we hoped, there would be a narrowing of the
number of different units being considered, but a richer set. Tilly's
list included more than a dozen ways he found students living. To name
just a few: small groups in garden apartments, dormitory rooms, a French
house, a veterans house, a radical commune, fraternities, apartments in a
residential neighborhood, eight-man dormitory cluster. The list seemed
to break down along several lines, particularly the type of group commit-
ment required, the size of units, and the spatial arrangements. At the
most private end were single rooms, although a dormitory arrangement for
these seemed uncomfortable. It required the sharing of bathroom facilities
and hallways and therefore was not private enough, but also had too little
group-public space to serve the social needs of residents. Small apartments
rented to people who chose to live together were a second type. A third
type was the dormitory "house"--more public than an apartment, less private
than a room along a corridor--suitable for individuals who want to expand
their social contacts. These became labeled "proximity groups." Finally,
there were large units for larger fraternal or communal groups.
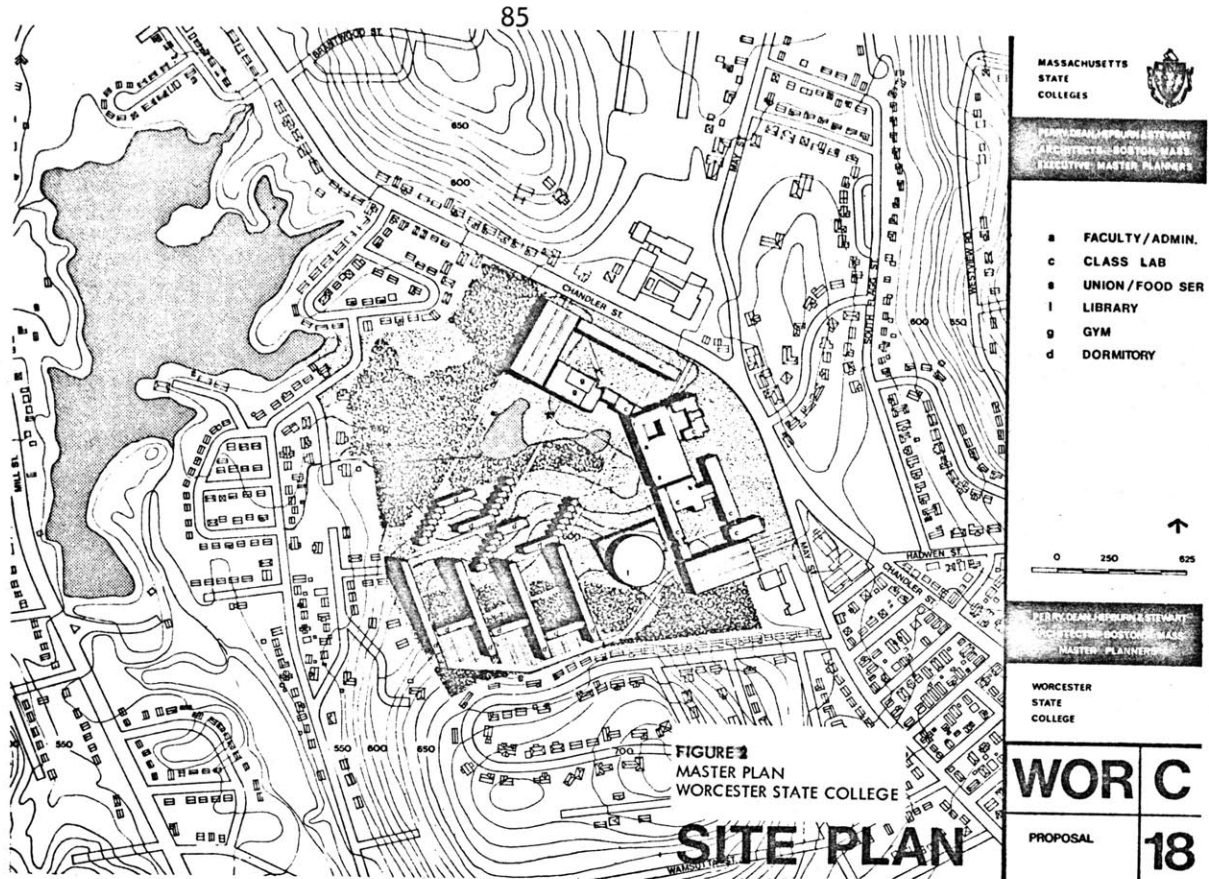
FIGURE 7: College Existing and Master Plans
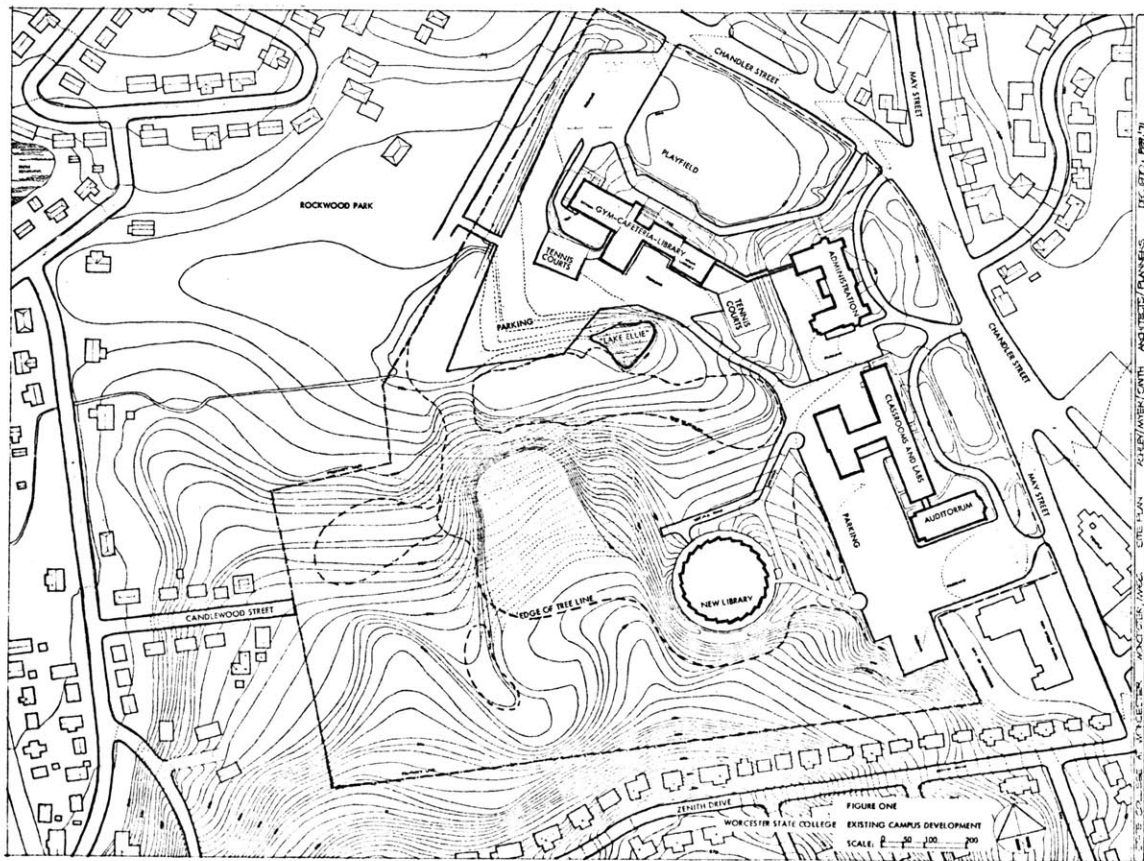
Three other options emerged from other sources. Various universities had experimented with living/learning settings where a faculty member actually lived with the students and where some of the classes were held in the unit. A unit designed for married students seemed worth adding to the list. And, on the early returns of the questionnaire, units to accommodate visitors or short-term residents were suggested frequently. (For example, some students who commuted long distances suggested units which they could rent for a weekend before exams, or when working on a project, or when just wishing to socialize at the college.)

The list of seven "living situations" was discussed at a staff meeting where all agreed that the technical group should decide the types of units actually to be built. A troubling issue was how to arrive at the right mix of units. Another was whether tailoring the units to such specific life styles would accelerate their obsolescence. Finally, there were questions about whether or not several of the life-styles could co-exist in identical units as, for example, small groups who chose to live together might exist in units similar to families.

Hopes that the technical group would resolve the question of what kinds of units to build proved wishful thinking. Its meeting in mid-January was attended by Leestamper, Stewart, other State and College officials, and members of the staff. The general consensus was that it would be good to accommodate all of the life styles implied, although there was a hunch that the demand would be highest for small apartment-like units and proximity units. Some nervousness surfaced about whether in the future the types of units available would match the changing pattern of preferences. College

officials were pressed on whether they saw the possibility of living/ learning groups being formed. Leestamper thought that they would be a good idea, given the right faculty to lead them, but was noncommital about whether he would actively move to form such groups. This posed something of a problem: the programmers were proposing changes to the educational institution with no way to achieve them, other than by creating the buildings which would be supportive. While the need to decide on the building demanded clarity from the institution, it was evident that Worcester State College was not in a position to describe how the prospective housing was intended to mesh with its other educational programs.

Added uncertainty arose over another question: what would happen if there was not enough total demand among the college's students for the particular housing to be built? Doug Smith argued for the building of relatively standardized apartments that could be rented to outsiders should the student demand not materialize. The counter argument was that more students might be attracted by tailoring the housing to different life styles, rather than by proposing one supposedly universal living situation. The question was put to the student consultants during their fifth (of seven) sessions. By this time they had made field trips to a variety of different kinds of college housing. They, too, found it difficult to exclude any of the types of units. When forced to choose, they preferred small self-selected group living units, proximity groups and large communal units. None were married, but they also felt that it would be desirable to include families in the housing. Living/learning units were more difficult to envision; the students were slightly amused at the prospect of

living with some of their professors, but could not imagine the College beginning such a "radical" program. None of the students said that they, personally, would live in the intensely private units and some were critical of students who withdraw from the social life of the college. But they pointed to other students who would prefer to live in such a unit. Here the problems of absent clients became critical and the architects found themselves advocating the interests of a group not present. None of the students, it seemed, knew much about the demand for visitors' units. So, many questions remained unanswered, although we were beginning to understand better the issues.

It was decided to probe the types of living units to build at a larger student-faculty meeting. About 35 persons attended. Slides were shown illustrating each of the main types of units. The group responded to them by saying whether they felt that form of living was likely to be sought on the campus and, if so, what proportion of the units ought to be devoted to such accommodations. A rough consensus emerged: the largest demand was likely to be for proximity groups; up to 50% of the units should be of that type. Small group units and communes were the next priorities. Most thought the demand would be low for intensely private and family units but felt that some of these units should be included. Living/learning groups and transient accommodations could exist in units designed for other types of occupancy. The meeting then considered other programmatic issues. Many felt that "opportunity spaces"--places not committed to specific uses at the outset but able to be adapted by the occupants--should be provided both in common and group areas of housing. "Blurred edges" to social groups were

sought, rather than housing that rigidly separated types of people. And again, the desire was expressed somehow to integrate the housing with the rest of the campus, to avoid a residential-commuter split.

(The difficulty of arriving at a package decision on the types of units to be included is dealt with here at some length because it exemplifies a common dilemma. In the abstract, such decisions should await the client becoming clearer about whom the complex is intended to serve and how the building will fit into the larger institutional context. But in actual fact, unless the question is forced by a needed decision, there is little incentive for the client to take a position. Thus package and clientship decisions, intimately linked, often have to be made together, and the programmer is forced to be more of an advocate of a solution than he would prefer.)

The programmers were not prepared yet to finalize the mix of unit types, but the next step was taken: preparing a first estimate of the size of each, based upon rough-cut judgements about what would constitute adequate space for typical activities. These estimates were then tested by designing units which seemed to fit the specifications. This process of design study also illuminated some of the finer-grained choices which would need to be made including: should individual bedrooms be accessible directly from entrances in the small choice group unit? should the proximity unit have firm boundaries or should they adjoin another such unit? what was a reasonable allowance for circulation areas? could a communal unit also serve as a living/learning group unit? Some of these kinds of questions and choices were posed to the student consultants, others were resolved internally. The responses represented a narrowing in on the de-

tailed programmatic criteria (patterns flowing from a package decision).

Programmatic choices were also beinb made for the project as-a-whole based on student consultants' suggestions and the discussions with the technical group. The student consultants' sixth meeting, where they presented ideal campus and housing plans cemented the view that any major recreation and meeting facilities should be located in the student center rather than the housing (package decision). It was decided to include only a small television and visitor lounge, a laundry area, a study space, vending areas, and an "opportunity space" to be unassigned initially but which hopefully might eventually become a coffee shop or some other student enterprise. And the decision was made not to include public dining hall in the complex (realistically, the budget couldn't have included it anyway) (package decision).

The programming process and concurrent site design studies were also advancing towards a decision on a site for the housing. From the start, a feeling generally shared by the State and College constituencies was that the housing be developed somewhere on the vacant western half of the campus. The official master plan showed it in that location (see Figure 7). But the master plan was so lacking in sensitivity to topography, vegetation and surrounding neighborhoods that it was hardly convincing. Moreover, it seemed to be filled with contradictions: the housing filled half of the vacant area (leaving no areas for athletic facilities), the remainder of the campus was shown as a dense, inter-linked set of buildings forming a spine along Chandler. An obvious question was whether the housing, too, should be concentrated in or over the academic areas, making the

entire College distinctive by its rich, dense mixture of functions. This option was included in an initial presentation of site alternatives.

The general preference for a site on the west part of the campus continued to be heard in public meetings and from members of the technical group. The questionnaire had asked about what the housing ought to be near (student center, classrooms, library, etc.), but the results were questionable when it was discovered that some respondents' impression of "near" included anything within an easy ten-minute walk while others though "near" meant things only a few feet distant (the problem of written questionnaires!). But the student consultants had clear views about the right housing site. They strongly opposed the notion of placing the housing over, or interspersed with, academic buildings, fearing that the 24-hour residents would seem to "possess" the campus, giving the sense to commuters that they were intruders in the residents' domain. Referring to their drawings--they by now had a clear image of what they would like the campus to be--they urged that the housing be set away from the academic buildings, as a way of opening up the forgotten backside of the campus and creating an enclosed central open space. The central space already included a newly-completed library and could be the site for the planned student center. The students said they would fight the notion of connecting the student center to an existing structure, as it was currently shown on official plans. A housing site was chosen on the west part of the grounds (pattern decision).

Towards the end of January a rough consensus was beginning to emerge on the shape of the housing program. A program draft summarized and extended what was decided. Final decisions were based on this draft.

The program was divided into five sections, which outlined the find-

ings, with a series of appendices providing backup data. The main sections

consisted of an Introduction (explaining the programming process), a state-

ment about campus considerations (relationship of the housing to campus prob-

lems, site issues and recommendations), a summary of housing considerations

(present living arrangements of students, housing preferences, the relation-

ship between housing and life styles), the architectural program (space

standards, performance requirements, and how modifications to the program

might be made if the budget shifted drastically), and a construction sche-

dule. The program was written for a diverse audience that included offi-

cials from State agencies, college faculty and students, and designers.

Five types of units were eventually incorporated into the program:

1. Private rooms (50 persons) - for intensely private life styles,

2. Four-person units (176 persons) - for small choice-groups or larger
   families,

3. Proximity group units (176 persons),

4. Collective units (100 persons) - two types, one for communes and one
   for living/learning groups,

5. Two-person units (24 persons) - for small families or shared living.

Brief descriptions of each of the kinds of people who might seek par-

ticular units were included in the program. As examples:

INTENSELY PRIVATE LIVING SITUATIONS

    Some individuals seek, above all, living accommodations that are
private and totally under their control. They want a living situation
where they do not feel forced to socialize with individuals living
nearby, where they can come and go without notice, and where they can
arrange or use their personal space as they please. Privacy, to these
individuals, means allowing only those whom they select to know their

personal affairs. Yet such individuals are not necessarily "loners",
they may simply prefer to spend most of their time away from their
living space—working in the library or laboratory, socializing in
the student center or neighborhood pub. Or they may be highly ori-
ented to formal academic achievement and may consider socialization
a diversion from their essential purpose. Their friendship patterns
are often tied to academic interests rather than living patterns.
Studies, including our housing survey, suggest that individuals who
seek intense privacy in living accommodations are more likely to be
upperclassmen or graduate students than less advanced students. Given
the ability to get a meal on or near the college campus at most times
of the day or evening, individuals in this group usually prefer not
to cook for themselves. Nevertheless, minimal facilities to make
coffee or prepare a snack at a late hour are desired. They want the
ability to change the environment in their room and use the space in
a way that suits their mood. They are not likely to entertain or
often to have large numbers of guests in their room. They are indif-
ferent to common lounge or recreation facilities and would seldom use
them. Given a trade-off, they would prefer money to be spent on
slightly larger private rooms, better soundproofing and private bath-
rooms rather than common facilities.

COMMUNAL COLLECTIVE LIVING SITUATIONS

The choice of living in a proximity group does not represent a
serious decision to become part of a group endeavor, although a de-
gree of group-centered activity may develop from the fact of indivi-
duals living together. There are other students who consciously
seek to live with a particular group for the purpose of experimenting
with a collective group life-style. The distinction between this pat-
tern and the "small group of choice" situation relates mainly to the
scale of the venture, which in turn, has an impact upon the quality
of group experiences.

The central idea which motivates a group to seek to live together
will be different in almost each case. It may be friendships, asso-
ciations or common backgrounds: a group of athletes, veterans, black
students, etc. It may be the desire to pursue a common interest:
anarchists, peace or ecology activists, the desire to speak French in
their living environment, etc. Or it may be the desire to experiment
with the actualities of living: sharing all possessions, trying to
achieve a completely egalitarian social pattern, etc. The collective
life style will usually involve establishing conventions and obliga-
tions concerning the individual's relationship to the group, ranging
from housework responsibilities to social conduct. These decisions
have the greatest meaning if there is a minimum of official outside
influence. A group of at least 10 or 12 seems to be desirable, al-

though the number may vary from group to group and, during the year, within individual groups.

The problem of designing settings for communal collectives is complicated by the fact that the living patterns are, quite literally, experimental and no two groups will decide upon the same conventions. However, several general criteria can be stated. The unit should be self-contained with a private entrance. It should provide adequate space for the entire group to eat together. Individual rooms should be large, permitting a maximum variety of possible uses. It should be possible to rearrange, redecorate and restructure the living space frequently. Finally, it should be possible to give the unit a distinct identity from the outside as well as within.

Patterns suggested by students, faculty or administrators, and gleaned from precedents, were scattered throughout the program rather than collected in a single section. The format of the architectural program was relatively traditional: packages were spelled out in terms of quantities of units of different types; approximate areas were listed for each of the spaces to be accommodated; the kinds of activities which might occur in each space were noted; performance requirements were listed where they might be missed by designers or where special circumstances prevailed (in bedrooms, for example, "electrical outlets should be able to accommodate appliances, including coffee percolators, electric frypans, etc.--often simultaneously").

Surprisingly few changes were suggested by those reviewing the program draft. President Leestamper seemed to agree wholeheartedly; in the margins of his copy were penciled "yes", "very important", and other supportive notes. An elderly woman who for many years had been Dean of Students endorsed the program, but it was clearly not what she had expected and at the end she added: "Perhaps one of the larger units could be set aside for gracious living." In mid-February, the board of the State College Building Authority officially endorsed the program and authorized the project to pro-

ceed. In their brief discussion, the only reservation was over the diffi-
culty they'd encounter managing that number of different types of units.
"I hope it works," one member commented, "we could sure do better than we
have in the past."

IV

The beginning of concentrated effort on detailed design signalled a
shift of emphasis and participants. The student consultants' work was com-
plete; they returned only once towards the end of the design stage for a
presentation of what had by then virtually been decided. Most of the pro-
grammers moved on to other activities and had little direct involvement in
the design. The carryover from programming occurred in four ways: the pro-
gram document provided the agenda for the design; one designer who had been
testing some of the programmatic decisions, especially unit layout, contin-
ued into the next stages of design; several of the principals, including
Myer and Smith who had participated in the programming continued to super-
vise the work; Tilly's slides were a resource consulted more than once
during design. But the process was somewhat disjointed and many of the
subtle patterns and notions of performance were lost along the route.

The design evolved through a series of parallel efforts, converging
on a series of deadlines established internally or by required approval
dates. Often these studies resulted in alternative proposals. The signi-
ficant decisions and trade-offs were made when the design team was forced
to collapse the alternatives into a single design for a presentation. As
the work proceeded, the programmatic work became more distant. Many of the

program's ideas became incorporated into the mental models of the designers, including the notion of providing for a diverse set of groups, the site dimensions, the small amount of area to be devoted to common spaces, and the image that the project should be domestic in scale. The program illuminated few of the design details: codes and the efficient use of space forced decisions about living unit arrangements; material choices were governed by economics and the Authority's attitudes about durability; site and building configurations decided by overlaying the designers' attitudes about the use of outdoor spaces (hardly touched on in the program) on the detailed topography of the site and remembering what students had said about the outdoors. Thus, the program was a starting point, but design added new insights and information.

Initially, designers explored several not entirely related avenues. One concentrated on trying to diagram the program in a form which could help generate a design. Part of this study consisted of an elaborate matrix of the most important design concerns for each of the housing types--their attributes, preferred location, and possible horizontal and vertical adjacencies. Whatever its value for that designer, the chart proved unintelligible. It was a useful piece of decoration, but had little direct bearing on decisions.

A second study delved into manufactured building technologies for units, and the codes that would apply. The initial though that 500 units (of the small scale individual rooms) might be a large enough order to warrant off-site prefabrication proved infeasible. But a series of interesting ideas about building form emerged, including the notion of providing

high, only partly finished interior spaces, shared by many students and able to be added to later. Serious doubts were voiced about their fit with Worcester students emerged--skepticism about whether these students might invest substantial time in changing their surroundings. But some of the balconies and vantage points in shared outdoor spaces did stem from these attitudes. The studies also raised the difficult issue of what standards of fire egress would apply to the complex. After a study of building codes, a discussion was held with local building officials. The question was whether apartment building standards (two exits per living unit) or dormitory standards (two exits from every room) would apply. This interpretation had great consequences for the building form since the latter standards would almost certainly require locating all bedrooms off common hallways.

A third study concentrated on the morphology of different building systems--what dimensions and kinds of spaces were possible if bearing walls and concrete planks, say, were used, or if it were a framed structure. From these studies, done by Slattery, came the notion of horizontal strings of buildings with staggered outside walls, lining an outdoor passageway.

Finally, a study focussed on site arrangements, beginning from two points: trying to create an outdoor "street" (from earlier plans for Hampshire) and adopting the students' suggestion to locate the housing along the edge of the tree line on the site. The two ideas did not immediately mesh since one suggested a linear strip of structures and the other implied more orthogonal arrangements.

The first attempt at synthesis was made at the beginning of March

when three combined alternatives were sketched. Together, they covered
the gamut of possibilities: site arrangements, unit plans, egress stan-
dards, building techniques. The overall impression in reviewing them was
that they were all too complicated to be economical. Moreover, all over-
shot the allowable floor areas. Doug Smith's desire to produce standard-
ized units by conventional construction was reaching a head. Over a week-
end, he and another staff member decided to produce a model of a garden
apartment unit that he felt could be produced within the budget. Other
designers rejected this as too conventional, but it accelerated the search
for standardization.

Slattery attempted to find a common denominator that would allow dif-
ferent types of units to be stacked in a standard envelope. Eventually,
he hit upon the idea of using a four-person unit as a basic area that
could be sub-divided to produce smaller units (intensely private) or mul-
tiplied on additional floors to produce larger ones (proximity units or
communes). The unit was roughly L-shaped which, grouped horizontally,
would also produce the offset facade he had sought in earlier studies.
This unit became the basic building block for the design (see Figure 8).

About this time, although no firm ruling had been made by the Fire
Commissioner, it was decided to abandon dormitory standards of egress.
This was a hazardous route, revealing an avenue that the programming
should have explored and resolved. But it reduced by one-half the number
of vertical stairways required and freed site configurations by allowing
structures to be built without corridors. Revised site designs also aimed
at higher densities and less site coverage to reduce costs. Buildings

which began at two or three stories now became three and four stories.
Site studies were done by moving scale cutouts of the standard four-
person module around the site in relationship to each other. Arrange-
ments became more intricate as they were tailored to specific topography
and existing trees. There was the need for a more evocative metaphor
for the site than the idea of a single street. At one point, John Myer
observed that the site design "reminded him a little of a Japanese wri-
ting character": a composite of strokes (the buildings) which inflected
outward but still seemed to compose a single form. This analogy suggested
that the street might metaphorically become a place where the qualities of
its surroundings were "compressed"--the woods, the hard-surfaced pedes-
trian way and the playfields could each show their face along a route
through the housing. And from that emerged the final site design.

Other details were also beginning to fall into place. The Authority
insisted on brick as an exterior material rather than the designers' pre-
ference, stucco, and new elevation studies explored how it might be
handled. A troubling problem was how to provide the second means of
egress to each unit. Finally, the suggestion that metal fire-escapes
might lace the exteriors of the units, serving as balconies as well as
access routes prevailed. This, in turn, added a new dimension to site
plans.

Space estimates were still over the allowable total and the decision
was made to depart from the original program by including a double room
in each standard four-person unit, along with two singles. It was also
decided to locate the larger units with internal stairs on upper floors,

reducing the heights of costly common stairs, another break from the program. But early in April, the overall direction was set.

The remaining weeks in April and May were spent simplifying, standardizing and refining building designs, and studying site details. In the process, a number of other programmatic intentions slipped by the wayside or were greatly altered. Cost estimates indicated that the original assumption that the package decision (setting a limit of 225 sq.ft. per student) had been based upon too low an estimate, and a way had to be found to fit more students into less space. Pitched roofs provided a solution, allowing lofts to be created in rooms on the upper story. In new sketches single and double rooms now became double and quadruple rooms, producing eleven and fourteen-person communes. At the same time, common spaces in these large units remained fixed in size (they were actually smaller in the larger communes than in four-person units because a stairway to upper floors had to be carved out of the living space), but they got added height from the sloped roof. Standardizing kitchen spaces produced a design that was slightly larger than that programmed for small units and considerably smaller and less elaborate than intended for larger units. Living units for less than four persons were also disappearing from the housing. The program had prescribed 50 private rooms, larger than the bedrooms of gorup units, but without common spaces or a kitchen. They were wedged into the standard four-person envelope and, for a time, the area might otherwise have been a living room was labelled as a larger room that might be occupied by visitors. Later the unit simply became a standard four-person space. Units to accommodate families and living-

learning groups met a similar fate, partly for cost reasons (private en-
tries and yards were deleted) and partly because the College had not come
forward with a plan to adjust the financing of the project to pay for
spaces not occupied to their maximum student capacity. Nobody was track-
ing the lost intentions or trying to coax along institutional responses.
Continued involvement of the programmers might have helped to retain more
of the agenda.

When the plans were finalized, four basic types of units remained:
four-person apartments on one level, eight-person units on two levels,
and eleven- or fourteen-person units on two levels with lofts. The common
spaces of all units were nearly identical. Despite what the project had
lost in terms of variation in unit type, the designs did grow in richness
of detail and opportunity for environmental experience.

Along the Main Street (now T-shaped, extending outward in three direc-
tions to the campus, the woods and the playfields) were located hard- and
soft-surfaced terraces, the post office, the housing office, a small
public lounge, the laundry, and a small uncommitted space that might be-
come a store or coffee shop. Metal fire-escapes and stairs offered stoops
at the edges of the space. Steeply-pitched, metal-clad roofs helped give
each stack of units an identity and emphasized the variation in their
heights. They also provided the residential profile that student consul-
tants had sought. Projecting window bays provided vantages along the
street; a third-level "bridge" framed the entrance to Chandler Village
(see Figure 9).

Left figure labels:

COMMUNAL COLLECTIVE
14 STUDENTS
2 FLOORS OF BEDROOMS
THIRD FLOOR SLEEPING LOFT
3½ BATHROOMS
TRIPLE-HEIGHT EXTENDED LIVING ROOM
KITCHEN

LARGE GROUP OF CHOICE
8 STUDENTS
2 FLOORS OF BEDROOMS
2 BATHROOMS
DOUBLE-HEIGHT LIVING ROOM
KITCHEN

Right figure labels:

COMMUNAL COLLECTIVE
11 STUDENTS
2 FLOORS OF BEDROOMS
THIRD FLOOR SLEEPING LOFT
2 BATHROOMS
TRIPLE-HEIGHT LIVING ROOM
KITCHEN

SMALL GROUP OF CHOICE
4 STUDENTS
LIVING ROOM - KITCHEN

INTENSELY PRIVATE
5 STUDENTS
SMALL LIVING ROOM

FAMILY UNIT
MARRIED STUDENT OR FACULTY

FIGURE 8:   TYPICAL UNIT TYPES -- CHANDLER
VILLAGE

Labels on figure: To The Campus, Link Portal, Link, The Tower, Link, The Cove, Fire Escapes - Balconies, Heavy Pine Woods, 103
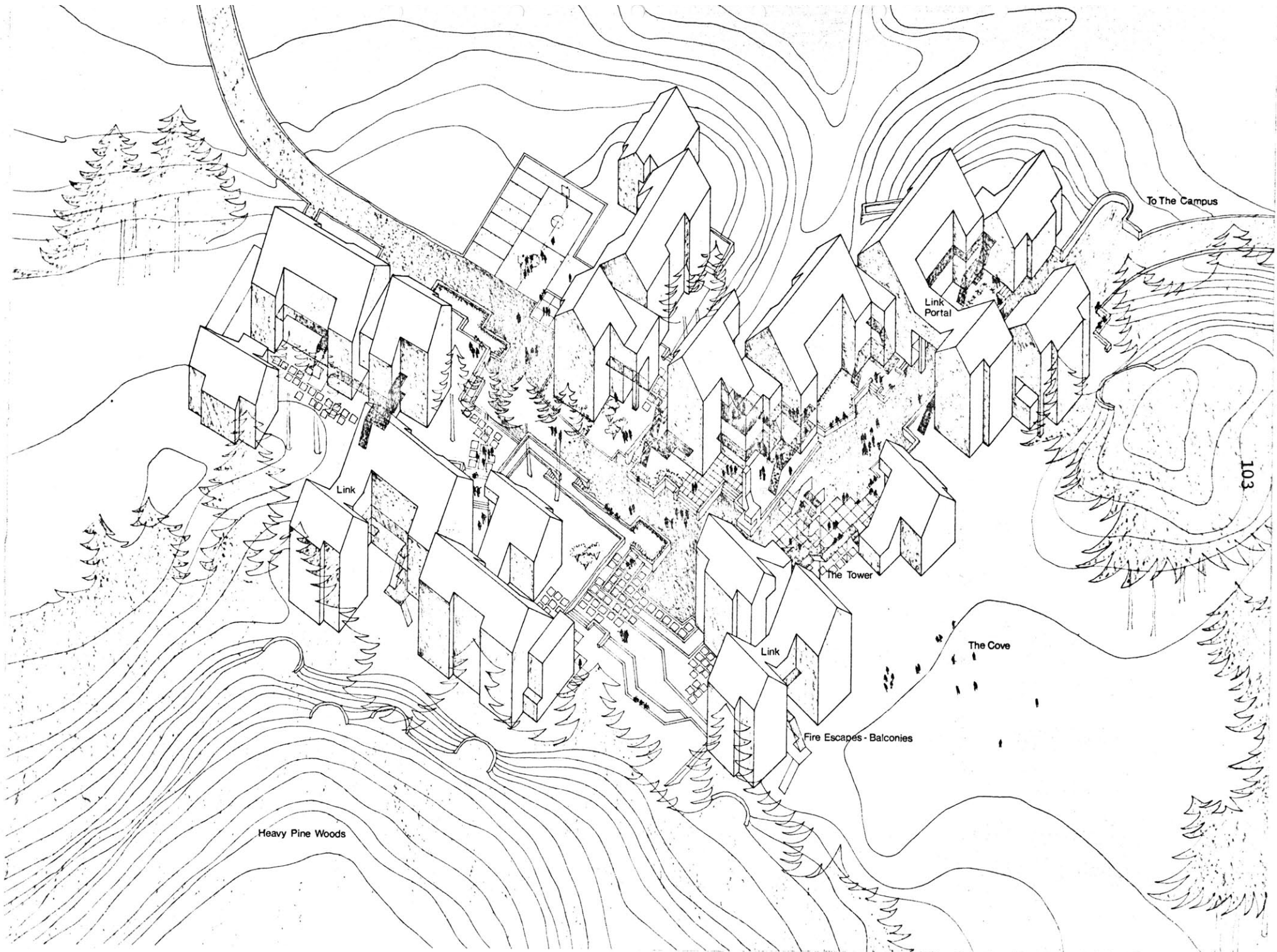
FIGURE 9: OVERALL BUILDING AND SITE ARRANGEMENT -- CHANDLER VILLAGE

The designs continued to evolve during the preparation of working drawings. Two days before working drawings were due, a problem which remained unsettled was how to design a stairway to the ground for two fire escapes which converged at a key corner along the street. Myer and Slattery saw the opportunity to create, at low cost, something more than a simple stairway. A late-night charrette produced a sketch of a high tower with seats and balconies--a place to perch and look down on the street. The sketch was immediately translated into construction drawings and apparently went unnoticed in the review of drawings. By the end of August, working drawings were complete and construction bids were almost exactly on target.

As in any architectural project, many details which affect the outcome were actually decided after construction began. One of these was the type of interior furnishings. During programming, it was suggested, but never totally agreed to, that furnishings might provide students with the opportunity to personalize their daily settings. It was suggested that some units be left unfurnished, allowing residents to collect items; for others, a storehouse of parts might be created, from which they might assemble their needed facilities. However, the Authority had apparently reached the limit of its willingness to depart from conventions and hired a swish firm of New York interior designers to furnish the project fully. An initial meeting with the architects (which also proved to be the only meeting) revealed an unbridgeable gap. The interior designers were simply interested in the colors they would need to match, the formica patterns that had been chosen for countertops, and whether or not they would be

able to choose the type of wall surfaces. In the end, each unit received

an equal dose of flair: plastic chairs, brightly-colored draperies, and

the like. The Authority was not displeased. Having taken the risk of

producing something different, they wanted it "finished" to the teeth.

V

As you walk towards Chandler Village from the College buildings,

the top fifteen feet of Myer and Slattery's glorious stair tower may be

found on a hill to your left. Painted bright yellow, it is now the pro-

ject logo, an uncomfortable reminder of the limits of programming and

design. It found its new location, apparently with the help of a cutting

torch and a crane, when State and College officials became alarmed during

construction over the possibilities of student pranks at that height above

the ground. Yes, they agreed, it had been overlooked on the drawings,

but managing the housing would be a lot simpler without having to contend

with the tower!

In the fall of 1973, about 375 students were living in Chandler Vil-

lage (see Figure 10). The vast majority were freshmen and most came from

outside Worcester, some from abroad, confirming the hunches that housing

would attract new types of students and that most students currently

living at home could not afford the rent on campus. (In a few years, it

may be assumed that the population will be more spread across college

years, since many out-of-town students will probably remain in Chandler

Village.) The initial demand had not been sufficient to fill all of the

units and the administration was, anyhow, undecided about whether they

FIGURE 10: Photograph of Chandler Village

should ever seek 500 rentals. They worried that the loft spaces were too small and produced too-crowded rooms. One guess was that the population might eventually climb to 450 students.

Because of the newness of the housing and because most residents were freshmen, it was too early to test the program's theories about how student living preferences might vary during their tenure at the College. However, informal interviews with students[9] did uncover some of their attitudes towards the setting. These included:

1. Overall, the reaction was overwhelmingly favorable. Their terms were typically: "great", "a real home", "exciting", "very appealing", "like a big family". The word "dorm" is seldom used to describe the housing.

2. A number of management decisions have negated or diluted the programmatic or design decisions. An obsession with the "abuse" of fire escapes (the noise of students passing by other apartments, security problems, supposed dangers when they become gathering places) first brought an outright prohibition on using them. Later, the rules were relaxed to allow them to be used furing daylight hours, but only for access, not for sitting or conversation. Thus, they have not realized their potential as stoops or socializing areas. Despite our suggestions about the importance of choosing roommates in some types of units, students were all assigned to housing units. Rents are collected from each student rather than from groups, and there is no process of groups being able to request and obtain a living unit. This "dormitory" system of management knocks some of the props out from group collaboration. Similarly, students were encour-

Figure labels (top drawing):
- Student Lounge Upstairs
- Laundry Room 3rd Floor
- Fire Escape
- Fire Escape
- House 25 I live there
- Construction
- Post Office
- Fire Escapes
- Fire Escape
- Entrance →
- ← To Class
- Under Construction →

Figure labels (bottom drawing):
- X music
- OUR HOUSE X
- NEVER BEEN IN THESE BUILDINGS
- POST OFFICE
- ← TO CLASS

FIGURE 11A: CURRENT RESIDENTS' DRAWINGS OF CHANDLER VILLAGE

then it's over to Patricia's

The day naturally starts at home

Then it's down the hill to class, followed by coming back home

Office area's

next I usually stop at the

by now it's 5:30 and time to go down the hill for dinner, followed by back home or back to Pat's

GYM

LOUNGE

CAFETERIA

ADMINISTRATION

SCIENCE

PARKING

learning resources center
LIBRARY

PARKING

FUTURE ATHLETIC FIELD

CHANDLER VILLAGE

CHANDLER VILLAGE — SOMETIMES GOOD, SOMETIMES BAD

LOUNGE HOUSING LAUNDRY

POST OFFICE / OFFICES

CHANDLER VILLAGE IS BASICALLY GOOD, BUT IN MANY CASES TOO SECLUDED FOR SUCH THINGS AS BASIC NEEDS, MOST PUBLIC TRANSPORTATION, ETC.

CHANDLER VILLAGE IS ONLY IN ITS FIRST YEAR, HOWEVER THE CAMPUS SHOULD INCREASE WITH MORE EXTRA CURRICULAR THINGS TO DO FOR STUDENTS LIVING ON CAMPUS. IT IS COMPLETELY ISOLATED FROM IMPORTANT NEEDS OF STUDENTS LIVING ON CAMPUS. ON WEEKENDS, MOST OF THE TIME THE LIBRARY IS CLOSED, THE LOUNGE IS CLOSED, AND THERE IS ABSOLUTE BOREDOM, THEREFORE I THINK THIS IS A REASON WHY MOST STUDENTS GO HOME.

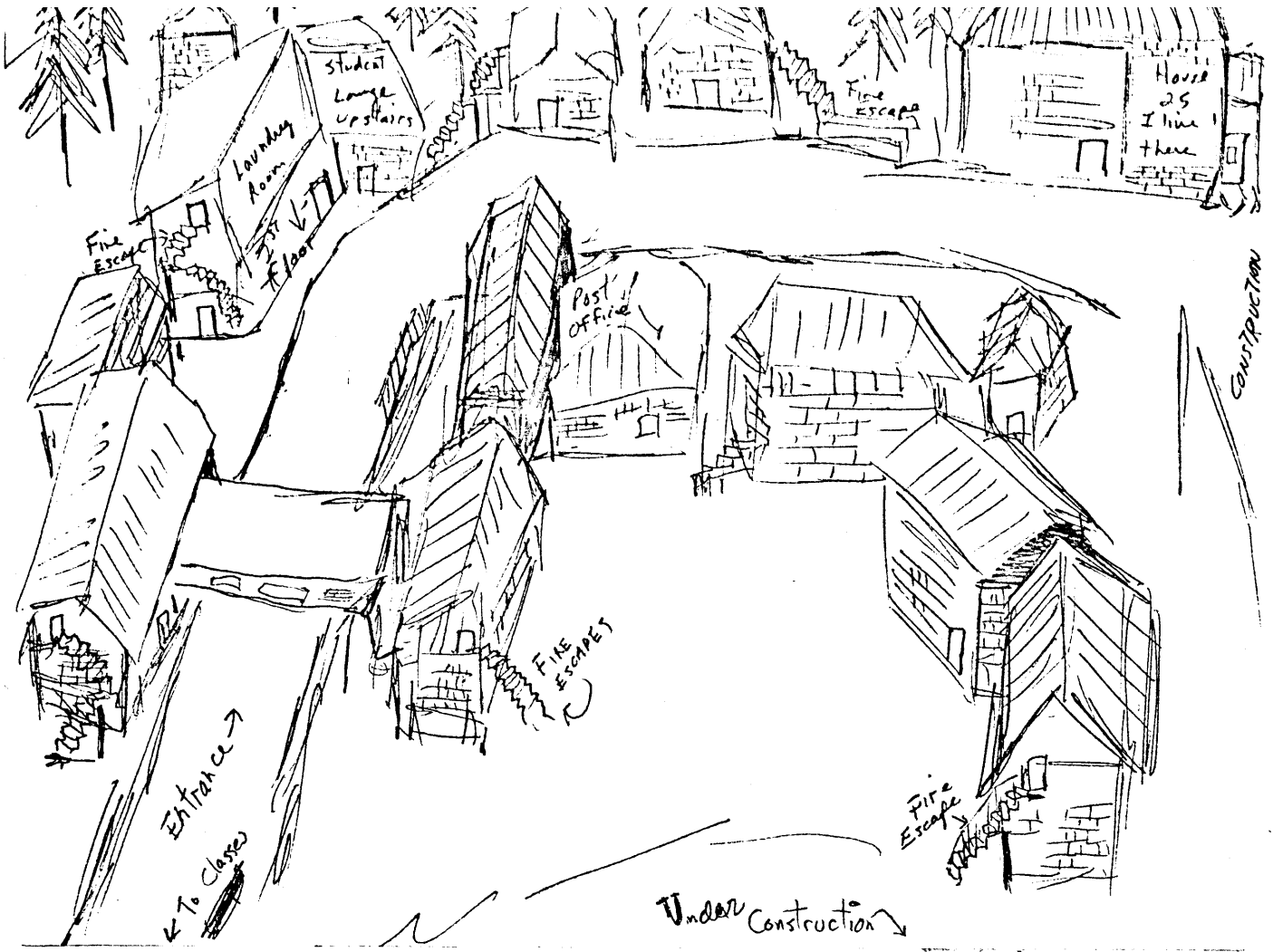THE ONLY THING TO DO IS EITHER GO FROM PARTY TO PARTY, CHECK FOR MAIL CONSTANTLY OR TRY TO STUDY

FIGURE 11B: CURRENT RESIDENTS' DRAWINGS OF CHANDLER VILLAGE
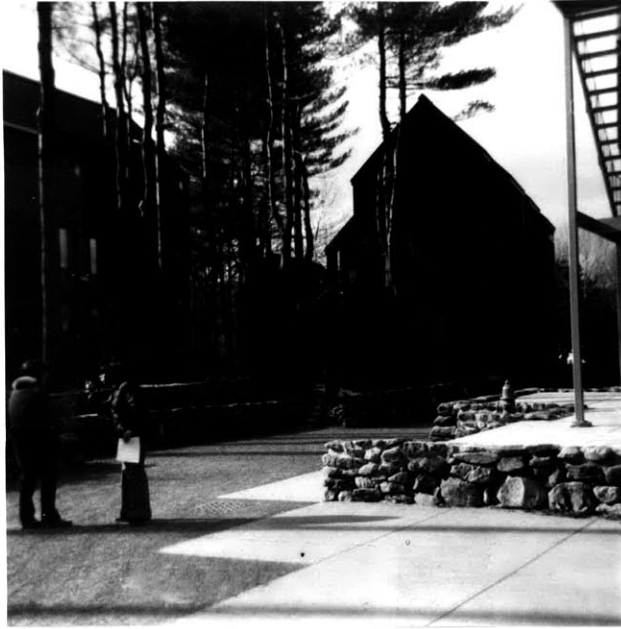
FIGURE 12:

Students' Photographs
of Chandler Village

aged to buy meal tickets for the Campus cafeteria, and the fact that many have done so reduces the importance of cooking and eating as a shared group activity.

3. Several aspects of the architecture are highly memorable and constant reference points (see Figure 11). The "street" dominates discussions about public territory; many of the students' photographs of activities at Chandler Village were taken there (see Figure 12). Living spaces are thought of as "houses," sometimes "townhouses," "along the street." These terms are used despite the fact that there are not distinct breaks between most vertical stacks of units. Student drawings almost always show, even exaggerate, the pitched roofs on units (many of the drawings actually resemble children's symbols for "house"; the forms seem to have deep associations). The residential scale of units reinforces this image. Somewhat unexpectedly, the vertical stairways that provide access to units are actually a stronger reference point than the units themselves. "He lives in my house" usually means that the two share the same stairway and ground-floor entrances, not the same apartment. The post office is the common space most frequently mentioned. That high trees have been retained along the street is often praised, and most students like the fact that the housing borders on contrasting spaces—woods and playfields.

4. Shared spaces in large units (kitchen, living room, eating area) are almost cursed as too small and, because they are the same arrangement as in smaller units, the occupants of larger units feel cheated. (Persons in 4-student units have more than double the amount of group-common space per individual than those in 11- or 14-person units.) Many students in

larger units say it is impossible to have all their roommates dine in the unit.

5. While a real sense of collegiality seems to be developing among residents, most also lament the gap between them and commuters, confirming earlier worries. This may change with the construction of a student center on campus (now planned at the location the student consultants preferred). Isolation of a different kind stems from the fact that most residents desert the campus on weekends, that students must go off-campus for any shopping or entertainment, and that shared facilities (like the laundry room) are dreadfully crowded.

6. Reactions to interior furnishing and details are mixed. Most students like the "finished" quality of their units and have added very little other than posters to the walls. In contrast, windows facing the street are filled with signs and slogans pronouncing residents' identity. Bright, chromatic colors on hallways and interior casework are disliked because they detract from their image of a "home."

College officials are effusive in their praise of Chandler Village. Many see it as the first step in transforming the College environment. Photographs of the complex are on the covers of all college materials, and the official Bulletin of the College notes:

> "The population is around 500. It's a wonderfully diversi-
> fied population...They have a variety of lifestyles too. They
> don't live in a "dorm," they live in a loosely-connected series
> of 26 "Town Houses" with self-contained living units in apart-
> ment style. There are single rooms and double rooms, and there
> are small-group settings with sleeping rooms clustered around a
> common living-studying-recreation room. Most have their own
> kitchen facilities and all are within a five-minute walk of the

first class in the morning...It's a learning laboratory in it-
self. Chandler Village was designed to be an extension of the
educational experience at WSC, a laboratory for the develop-
ment of interpersonal relationships. It's a social setting in
which to learn about leadership, cooperation and responsibility
in personal decisions. The success of the experience is large-
ly up to the individual, but the environment at Chandler Village
is conducive to learning to understand the needs and respect
the rights of others."

VI

Chandler Village's programming process contrasts sharply with the

headlong rush into design in the Warren Gardens project. Yet both pro-

jects were done in the shortest of times (by some of the same people),

both had shoestring budgets, and both projects faced uncertain receptions.

What was gained by programming? How might the process be further improved

based on the experience in Worcester?

Preparing the Worcester College Housing Program injected new infor-

mation into the design and decision process, highlighted the concerns of

user-clients so that they had equal force to those of decision-makers,

and forced decisions at an early point to avoid later delays. Many of

the design ideas which failed the test of user-reaction, amost surely

would have failed if they had been built. And, while last-minute design

trade-offs struck at the intent of parts of the program, many of the

ideas of outsiders survived to actuality.

But both the programming process and its product also fell far short

of influencing the final environment in at least five ways. It failed to

project a specific enough image of the end-product (especially about

"living situations") to serve as a later generator environmental pat-

terns. It offered no guidance about how trade-offs should be made in the event that economy forced these (which it did). Many of the ideas of student consultants were lost through their ineffective presentation in the program documents. It gave the illusion of agreement on several issues that had not been adequately discussed and were eventually decided in opposite ways (i.e., furnishings). It had no influence on critical decisions about occupancy and management arrangements.

One error was considering the programming process a finite project that ended as design was beginning, and depending so heavily on the program document as the slender thread of continuity to later decisions. Many down-the-line decisions simply could not have been anticipated at the outset. The project might have been better served if surrogate-users and programmers were on the scene throughout the design. One model might have been to use initial programming as the excuse to form a working group of students, faculty, state officials and professionals who served as the collective client throughout the process. Eventually they might have become the managers of the housing. Another arrangement could have been to legitimize the professional programmers as user-advocates throughout the design process, establishing check-points where the design would be tested against what they know of preferences and desires.

The program, itself, could have been more useful if it had presented its information differently. By spelling the linkages between environmental packages, patterns, and levels of performance, some of the necessary trade-offs might have been revealed. For example, what construction methods and levels of conventionality were implied by the original unit

cost estimate, and were these acceptable? How would finances have to be restructured to include families, or faculty in living-learning groups and what would the annual cost be to the College? Patterns and performance requirements were sprinkled throughout the text of the program and these might have had more vorce if presented in a deliberate format. (The next several chapters will suggest some formats.) The program statement "Discussion of their (student consultants) ideal plans resulted in a preference for clustering units of different types of three sides of outdoor spaces," would have been much more persuasive if accompanied by a simple diagram of how this might be done, and a more extended description of the underlying reasons for this proposal. A performance requirement like... "students (should) be allowed to redecorate rooms by adding posters to walls, painting parts of rooms and furnishings, etc. Room finishes should not easily damaged by such individual initiatives" would have been more useful if accompanied by a statement of how the design could be tested to reveal whether the requirement had or had not been satisfied. And, even if clients had not been present during later stages of design, richer scenarios of the environment being used would have helped recognize when trade-offs were resulting in an environment that wouldn't be minimally workable.

Finally, the programming process seemed to result in decisions by default (when no strong objections were voiced) rather than be a balanced weighing of issues. Options to the emerging programmatic directions were seldom presented, no one shouted when ideas were being discarded. Hence, later design decisions sometimes directly ran counter to programmatic

proposals. A more tightly-managed decision process, that looked at extended sets of options, might have produced an environment that was less a product of default.

FOOTNOTES: CHAPTER 3

1. In an ironic turn of events, housing was eventually built at Hampshire, patterned after the prototypes for Worcester when they proved economical.

2. Sommer, Robert, Personal Space: The Behavioral Basis of Design, Prentice-Hall, Englewood Cliffs, New Jersey, 1969.

3. van der Ryn, Sim and Murray Silverstein, Dorms at Berkeley: An Environmental Analysis, Center for Planning and Development Research, University of California, Berkeley, CA, 1967.

4. For example, one study might deal with study habits, another with the use of lounges. There would be no way of telling how the data intersected for particular individuals.

5. Sommer's conclusion that two students almost never used both desks at the same time covered only 85% of the cases, for example.

6. Lunsford, T.E. (ed.), The Study of Campus Cultures, Papers presented at the Fourth Annual Institute on College Self-Study, University of California, Berkeley, 1962.

7. About 35% of the 2800 questionnaires were returned, an excellent response.

8. Ashley/Myer/Smith, Inc., Worcester State College Housing Program, February, 1971.

9. Interviews done by Micheline Papadakou, Frank Benesh, Ann McHugh, Charles Bahne, Jorg-Dietram Ostrowski. They consisted of unstructured discussions, having students draw and photograph their living environment, and reactions to images of the environment.

CHAPTER 4 - ENVIRONMENTAL PACKAGES

In the two cases just described, Warren Gardens and Chandler Village, assumptions about the environmental package served as the entre to programming. In the first instance, FHA maximum mortgage limits and rules for computing them set a ceiling on costs (and therefore, space), subtly influenced who could be accommodated in the housing, and forced difficult tradeoffs in environmental form. The number of units was also established at the outset by redevelopment authority guidelines and the allowable site cost which could be borne by each unit. In Chandler Village, a quick computation of rental levels and service costs, based on experience at other state colleges indicated how large a mortgage could be supported, and working backwards, how much space could be built for each student. While they served as tangible initial guidelines for how the projects should be designed, these initial "fixes" dramatically narrowed the range of solutions which could be entertained.

Packaging is often the least creative, and, at the same time, most deterministic activity of programming. Yet, when really unique environments are created it is often because someone was able to alter successfully the obvious formula for financing or longstanding institutional arrangements or the external conditions under which the project is to be built. This chapter discusses the conventional ways of examining an environmental package, and points to some fruitful avenues for innovation. Many of the terms used throughout the chapter are defined more fully in Appendix I.

I

The outline of an environmental package are most easily sketched in cases where a few considerations dominate. The packaging of neighborhood shopping centers, for example, hinges almost exclusively around several key economic variables, each of which is dependent upon routine behavior patterns that can be observed elsewhere.[1] One important variable is the question of scale. Most consumers prefer to do a variety of shopping on a single trip, centered around a visit to a supermarket. Unless a center is above a certain threshold of size, it will not attain credibility as a multiple-stop center, especially in competition with others that are larger. Experience suggests an optimal size of 25-30,000 sq.ft., assuming a 15,000 sq.ft. supermarket (the same issues of threshold apply to this facility). A second linked variable is tenant mix. Certain combinations provide a good match with day-to-day needs of consumers, but the choice also depends upon nearby competing opportunities. Establishments differ in the rent they can pay and in their drawing power. Tenants that are branches of national chains will generally sign longer-term leases than local establishments and the longer commitments will decrease the equity requirements. A third variable is the support requirements. The amount of parking (again, as suggested by experience) will determine the minimum site area required. The need for adequate access routes and for visibility of the center will impose constraints on workable site dimensions and imply a level of performance for the center. In turn, site costs will have to be reconciled with the economic returns expected from rentals. Site dimensions will limit the patterns of development that are possible. And so on.

The experienced developer or programmer will begin by sketching, sometimes on the back of an envelope, the broad outline of his desirable environmental package, noting the essential ingredients and the commitments he will need before proceeding to think about details. For a tightly prescribed project, such as a neighborhood shopping center, a week or two of further probes will often demonstrate whether or not the project is feasible. Over time, those involved in development packaging evolve an almost intuitive sense of whether or not a prospect is worth pursuing.

But in most environmental development projects, assembling the environmental package is not as straightforward as in a strictly commercial venture. The package may be a dependent variable, flowing from pattern or performance objectives. For example, in planning a new community, the programmer may ask what could be supported in local commercial centers if they were within easy walking range of all residents, rather than dependent upon driving.[2] In turn, the answer will be influenced by decisions about housing densities and community form. Or, he might ask what could be supported if shopping facilities were combined with schools, thereby shifting the ways they are routinely used. The price to be paid for land might be set as a result of decisions on what it is desirable to include in a center, rather than as an independent decision. The program for commercial centers will, in all of these cases, be quite different than if they were packaged in isolation.

Where economic returns are not the crucial issue, often arrangements for use, the overall identity of the project, political and social concerns, and fund-raising or logistical opportunities come to dominate package decisions. A university may decide to develop an arts center as a

single facility, rather than to disperse its many artistic activities around its campus because of the particular attitudes of its fine arts faculty (who wish greater group identity), the whims of outside donors (both public and private benefactors who wish a "monument"), and the desire to make multiple use of certain facilities which are to be included.[3] Often such decisions are made without a searching analysis of clientship, without serious inquiry about the level of performance expected of such facilities, or even without exploring alternate patterns for grouping facilities. For an arts center, "multiple use" may only be a vague concept which evaporates in the light of a careful analysis of how often spaces might be called upon to be used jointly. A programmer can play an important role by describing the range of ways that the environmental package may be derived from alternate starting points.

"Rules of thumb" are the common currency of environmental package decisions. Often rough extrapolations from experience, they provide a point of departure for a more detailed analysis of what should be included in a building project. For example, the program for an office building may be sketched from several such guides: "Floors should be a minimum of 10,000 rentable sq.ft., subdividable into two equal areas"; "the building should be at least 100,000 sq.ft."; "2½ parking spaces per 1000 sq.ft. should be provided"; "a net-to-gross sq.ft. ratio of .80 is optimal"; etc. As the inquiry progresses, each may be found to be invalid or in need of adjustment. Clients may be found for smaller floor areas. A low land price and block leasing may make a smaller building possible. There may be off-site parking nearby. The guides are embarrassing oversimplifications, but they will have served their purpose if they provide

an initial "fix" on a set of necessities -- in this case, economic --
that can be modified by obtaining more detailed information.

While all programmers use rules of thumb, they are reluctant to commit them to print,[4] perhaps for good reasons because they understand that exceptions outnumber the norms (perhaps also because they represent the "expertise" they depend upon for their livelihood). In a few areas, trade magazines serve the role of publicists — periodicals such as, "House and Home" or, "College and University Building" serve this purpose for their respective audiences. What passes for wisdom in the field is often nothing more than a broad command of rules-of-thumb, and more importantly, an understanding of when they are or are not appropriate. But there are also more formal techniques available to the programmer which assist in making package decisions.

II

The analyses which result in proposals for our environmental package are generally prompted by six types of questions:

1. What can be afforded? An analysis of the relationships between costs and benefits (or revenues) over a typical accounting period is the most common way of reflecting this consideration.

2. Is it a sound investment? Opportunity costs and possible substitutions must be added to the economic equation to determine whether the project or its components represent a sound investment.

3. How well will it be utilized? The fit between spaces or facilities and activity patterns is the issue posed by this question.

4. What standards must be met? The package may be heavily influenced by mandated norms and standards.

5. How will it be managed? Operational considerations may favor some packages over others.

6. How will development or changes be accomplished? Logistical schedules or organizational necessities may further constrain the dimensions of the package and require an unimaginative response.

Certainly, these are not the only issues which may shape the package, and in any particular project one or more of them may tend to dominate. But in their essentials, they bound the context: economics, use, management, standards, conventions and process.

Affordability

An analysis of affordability aims at describing the optimal scope of development or changes based on what it will cost each year and what benefits will result which may be weighed against these costs. Where the project produces benefits in the form of dollar revenues, the analysis may take the form of a cash-flow statement [5] comparing income from all sources with fixed and predicted variable costs. The amount of space, or magnitude of changes that can be afforded may be estimated directly from the balance sheets.

Where the package does not produce easily-identifiable revenues-- such as is the case of public environments (streets, open spaces, public service facilities) or institutional spaces (university buildings, churches)--benefits may need to be computed indirectly, such as by imputing values [6] to purposes served. For example, the costs of a new fire station in a neighborhood may be compared to insurance premiums saved and cost savings over operating from more remote locations. The value to a city of a landscaped mall in a commercial area might be imputed by its effect

on adjacent land values; hence, taxes and increased sales taxes of enterprises fronting on it. Alternatively, if benefits are entirely in non-monetary terms, the analysis may concentrate simply on whether annual costs can be afforded within expected budgetary revenues. In still other cases, an uncommensurate list of benefits may be adequate; the most desirable package might be inferred by observing what is gained or lost by the addition or deletion of particular facilities.

Imputed values are almost always imperfect measures, failing in most instances to account completely for intangibles such as convenience, decreased perception of time, or increased satisfaction. Yet, regardless of the calculus which is used, the distribution of benefits among the various parties is often as critical as their total. For example, a fire station which benefits some private parties at the expense of the general public must be considered in terms of equity and its effect on general welfare. Too frequently, this aspect is not explored.

Understanding the relationships between costs and benefits is only the first step in resolving affordability. Usually a variety of combinations of space and uses are affordable, and further decision rules must be brought into play to choose the best package. One set of such rules relates to its performance as a financial investment (see below), but other, less tangible, rules may also apply. Clients for a project to renovate an environment may seek the package which allows for the greatest continuity of current usage; changes must be affordable in human as well as financial terms. Or conversely, the benefits may need to be overwhelming (not 1:1, but at least 3:1 or 4:1) to justify the effort

of change. In most cases, the most desirable package will represent

some combination of human and financial affordability.

Investment Value

The fact that a package is expected to produce a positive cash flow,

or that the benefit-cost ratio exceeds 1, does not automatically guaran-

tee that the project is a worthwhile investment. Any project, whether

for-profit or not-for-profit, that requires resources to be dedicated

over long periods incurs opportunity costs, and these must be added to

the equation before rendering a judgement.

For revenue-producing packages, an investment analysis usually in-

volves accounting for the present value of future returns (discounted

to reflect opportunity costs and the level of risk associated with the

type of investment), the tax value of depreciation, and the rate of re-

turn on investment after taxes.

For non-revenue-producing packages, accounting for opportunity

costs is more complex. Generally, it will mean the benefits that could

be derived from alternate uses of the institution's resources that are

being invested in an environment. For example, a university which is

considering the investment of $1 million in cash in a student housing

complex might consider the benefits obtained from alternate uses of the

earnings of that money, if it were invested in securities. Other possi-

bilities might be to subsidize student rentals in private housing, or to

pay commutation costs, or to pay for social programs and events which

foster the sense of community otherwise sought through constructing

housing. These computations are seldom made and, as a result, resources
are often not used as effectively as possible.

Life-cycle costing is a second type of investment analysis which
may aid in deciding upon the most desirable split between initial and
later investment in an environment, especially in view of spiralling
sectoral costs such as for energy that outpace the ability to charge,
and during times when construction costs are rising faster than the
general inflation rate. Costs can be disaggregated into each of the
environmental subsystems, different escalation rates can be applied to
each, and then costs can be discounted to obtain a figure for the pre-
sent value of ownership of the building (or environment) over its life.
Sometimes this analysis will point to instances where initially higher
csosts are more than paid-for by downstream savings on maintenance,
operations, or expansion. As an example, in a programming study for
governmental buildings in Louisville, Kentucky, it was demonstrated
that it was more economical to build into structures expansion spaces,
rather than add to buildings later, because of predicted sharp increases
in construction costs.

A number of institutions and large corporations have gone one step
further by analysing the aggregate costs of operating both programs and
environments over a 30 or 40 year life. The environmental costs almost
always constitute only a small proportion of the total and such an
analysis sometimes demonstrates that higher initial investments in the
settings for work may be repaid quickly if occupants are more satisfied
or more productive as a consequence. Annual environmental budgets become
a line item in each of the program budgets, much in the same way that

department stores "charge" each department for the space they occupy.

While the examples noted above have centered on building applications, clearly similar forms of analysis are warranted in resolving packages for large scale land development, urban renovation and change, and the design of urban service systems.

Utilization

Utilization analysis involves measuring or predicting the level of environmental occupancy or use, in comparison to its actual or theoretical capacity. Most often the value of such occupancy is not the issue; it is accounted for in the calculus of costs and benefits. Rather, the emphasis is on the efficient use of existing and proposed resources for the activities they serve. Thus alternate patterns of distributing activities in space are fitted to packages of areas and facilities.

Sometimes judgements about utilization can be made intuitively. It takes no sophisticated analysis to discern that an elementary school is better utilized if it is active during the evenings as well as during the days, or that a street on which traffic is evenly distributed during the day can be designed for lower capacity than if the same number of daily trops accumulate at peak times. But where the matching of activities and space is more complex, or where the question of whether to build new facilities hinges around issues of whether there is marginal capacity in existing facilities, a more systematic analysis of utilization may be warranted.[7]

The programming of classroom facilities on a university campus is one such example. An analysis might begin by attempting to define

a theoretical index of use-capacity for existing classrooms, as a product of student places and the number of hours they could be occupied. Actual usage can then be compared to this figure using the same calculus. Of course, facilities will never be fully used: class sizes will not always match classroom capacity; the demand for classrooms will likely not be equally spared across the day; some classes will require specialized facilities not available in each classroom; and a host of other factors will lead to "underutilization." Moreover, efficient utilization may not be the sole criteria for judging whether new spaces are needed. Some departments may wish dedicated facilities, some areas may be set aside and furnished for special occasions, the convenience or value to the educational program of scheduling all classes in the morning may take precedence over efficiency. But, even recognizing this, a measure of utilization may be helpful in pinpointing whether apparent classroom shortages are caused by locational frictions, poor scheduling, a mismatch of capacities and class sizes, or inadequate specialized facilities. If the problem is one of these, remedies short of new construction may be in order. Most university planning departments are attempting to refine measures that provide the basis for an ongoing environmental accounting system.

A range of rules-of-thumb have been devised by programmers to express desirable levels of utilization when faced with decision about capacity. Churches sometimes are sized for the third largest annual attendance at a service (they are willing to suffer the inconvenience of adding folding chairs and remote loudspeakers at Christmas and Easter). Parking areas in regional shopping centers are designed so that the

capacity within a ring road serves the demand 350 days of the year (with the remaining 15 peak shopping days drawing upon parking in more remote locations). A shoppers' parking garage is often considered full if it reaches 85% of capacity (15% of the spaces will be accounted for by poorly-parked cars and cars entering and leaving). These rules of thumb are the product of repeated experience. One of the difficulties in deciding upon what facilities are needed is that there is little knowledge about the actual capacities of facilities. What is the maximum reasonable capacity of a city park, or a beach, or an elevator lobby? By devising an environmental accounting system and charting utilization over time, we may begin to know answers to these questions.

There is a danger in confining utilization analysis strictly to questions of maximum capacity; other thresholds at well below those levels may be equally crucial. For example, if one value in designing a street or public space is that it have a sense of liveliness, the question immediately raised is how the amount of space ought to relate to expected levels of usage to ensure that this is so. A "lively street" may turn out to be one which is crowded only an hour or so each day. If the planning of a neighborhood in a new community is intended to provide the opportunity for friendships, the crucial question may be what are the minimum numbers of people in like circumstances (e.g., elderly, women with pre-school children) that should be accommodated to ensure the desirable level of friendship opportunities? We have few rules-of-thumb to guide such package decisions.

Standards

Often the array of norms, mandated through such devices as building codes, fire codes, zoning codes, subdivision requirements, insurers' or mortgagers' requirements, and manuals of conventional practice are the fundamental determinants of an environmental package.

Among all the influences on the quality of housing environments, FHA minimum property standards and maximum mortgage allowances together have probably had the most pervasive effect. Often, the problem is not simply identifying what sets of standards apply, but also of interpreting into which subcategories of any particular standard the project falls. In the design of Chandler Village, a crucial issue was whether college housing units, varying in size from individual rooms to large communal living situations, would for code purposes be considered a "dormitory" or an "apartment." The consequences of being considered a dormitory would be serious for the package which could be built: construction materials with higher fire ratings would be required (their cost would, in turn, limit the size of the package); egress in two directions would be needed from each bedroom (adding to common hallway areas, limiting patterns of internal arrangement, and forcing interconnected buildings in order to economize on stairways); and so on. Logic is not always persuasive in the face of inflexible code administrators. Hence, an initial standards analysis must flag issues which are likely to have overriding influence on the patterns and packages which may be considered.

Often the most useful initial analysis consists of simply culling and compiling the standards which seem to apply, then annotating these with a series of diagrams and notes which express their pattern consequences and the potential sources of conflicts with what is desired. For instance, a series of building envelope sketches may illustrate the effect of zoning requirements, and point to the range of solutions that are possible. In virtually every project, standards will be ambiguous: a sloping site will raise questions about from what point building heights must be measured; standards for roadways drawn for single-family detached houses will not easily match the situation for a higher-density planned unit development; the requirements from zoning and fire codes may be in direct conflict. In making the case for a particular interpretation, it is important to note that any standard is both a prescriptive (the norms it sets) and descriptive (the way these are mandated) device. It may be inapplicable or need to be interpreted on either grounds. Chapter 6 examines the subject of how standards are set in greater depth.

Management

An important influence on the package may be the way an environment is to be managed upon completion. For revenue-producing projects, rental and leasing considerations may help frame the outlines of the project. In a general-purpose office building, for example, the 10,000 sq.ft. module noted previously has evolved out of experience with negotiating leases, with developers finding a module of that size most fre-

quently sought. Management and services also are not infinitely sub-

divisible: a full-time watchman becomes too costly if his salary is

prorated over too small an area; a playground or swimming pool becomes

impossible to support if too few housing units are included in a pro-

ject; installing and operating a small sewage treatment facility re-

quires a certain minimum number of housing units to be feasible in view

of competitive land prices.

The management analysis may uncover issues which imply patterns as

well as package parameters. An analysis of how snow removal will be

managed on a site may imply that pedestrian ways have no steps or right-

angled changes in direction. Fire protection concerns may make it im-

perative that certain locations along a pedestrian street be clear of

obstructions so that equipment can reach high buildings. For the manage-

ment of housing areas with a large anticipated turnover in occupancy,

paved access for moving vehicles to each door may be considered necessary,

limiting the range of possible site arrangements. The first beginnings

of a catalogue of patterns may emerge from just such a management analysis.

A good management analysis is seldom linear; it requires inventive

thinking about management arrangements as well as about spaces that are

possible to manage. The first enclosed-mall shopping centers evolved out

of an analysis which demonstrated that, in operational terms, they were

as economical as shops fronting outdoors, while more attractive to users.

The analysis balanced increased enclosure costs against reduced store-

front costs, the recapture of store-front display spaces, lower heating

loads, more effective maintenance, and the fact that mall areas could

bring added revenues in the form of concessions. Moreover, it recog-

nized that maintenance costs could be charged to tenants as part of an overall management package that would also include year around scheduling of events, advertising, and other services tailored to the existence of the enclosed mall. In the programming of Chandler Village, the failure to deal creatively with management arrangements has meant that at least two important environmental objectives could not be realized. One was the desire to provide the option for students to furnish units themselves, either with items brought to the College or by drawing from a common store house; the incentive was to be reduced rentals. The second was to make it possible for small families to live in the housing at a unit cost less than what could be charged if the unit were occupied by unrelated singles. In both cases, lacking any management system that could deal with the problems which would be raised, the College chose the system that was easiest administratively: it furnished all the units and charged equally for all bedrooms, not providing for the reductions which families would need to afford to live in the complex. Better programming on the side of management arrangements might have helped to achieve the social intentions.

An interesting example of projective thinking about management (by the same firm that designed Chandler Village) is a report accompanying the program to transform downtown streets in Washington, D.C., into pedestrian places. Entitled <u>Streets for People: How to Use Them</u>,[8] it suggests the form of a management entity for the streets, lists maintenance technology and procedures, describes a possible way of scheduling activities in the spaces to be created, and provides a detailed breakdown of operating costs and sources of funding. While the final version

of the report was completed after the design, it was first drafted during the earliest programming studies, and the issues raised in it were given the same attention as the built environment at each step along the way. It remains a curiosity that built environments—among the most lasting investments individuals and institutions make—are seldom accompanied with user-manuals, while we expect these from the purchase of dishwashers, stereo components, automobiles, and even typewriters.

Process

Just as the path chosen to drive between two places presents opportunities but also constrains what may be experienced, the process chosen to accomplish environmental development and change narrows the range of what is possible. Time schedules, the capabilities of individuals and organizations involved, the logistics of change, and available technologies are all important in shaping the environmental package. As with all forms of programming, the analysis is not simply deductive, it may involve rethinking each of the determinants until the best path is found.

A restricted time schedule shapes what is possible in several ways: it may limit the depth of analysis, thereby forcing a heavy reliance on immediate precedents; it may force a sequential pattern of design decisions, including an early start of construction, where the consequences are not fully known; it may alter the relationship between fixed environmental supports and those which are changeable. If time constraints are immoveable, the programmers first task is often to explore what it is possible to do within that limit. A classic example is the classroom

construction program undertaken by the State University of New York in

the mid-sixties to cope with the shift to open admissions on campuses

in the State. Using fast-track constructional methods, a dealine of

12 months from the time of commission was set for Smith Hynchman and

Gryllis, Architects, to complete construction of a large number of class-

rooms. Working backwards, that meant that foundations needed to be

started and certain materials ordered at the end of the first month--

before architectural plans were more than rough sketches. In turn,

from a programmatic standpoint, the situation necessitated adopting at

the outset a planning module which could apply broadly to many types

of uses. While this is an extreme case, time for a programming process

must often be purchased at an opportunity cost and, hence, must enter

into the calculus of the investment. As I shall note in Chapter 11,

the best short programming process is not necessarily simply a condensed

version of what one would do if more time were available.

Individual and organizational capabilities are usually more diffi-

cult to pinpoint, but may have equally pervasive effects upon what is

possible, and how it is experienced. In the case of regulatory programs

for land development, the procedures chosen may exclude some developers

who are incapable of mastering legal intricacies or do not have the

financial resources to persist through a lengthy approvals process.

The well-intentioned program for managing development in California's

coastal areas has apparently had the unintended consequence of virtually

precluding small developers from those areas; they have neither the

skills nor resources to undertake the analyses and negotiation to meet

the requirements. The same is also true in building development where
small developers are often precluded from low-cost housing construction.
Moreover, an organization suited to building may not be equally capable
of managing a completed environment, as the performance of public housing
authorities often attests.

Equity and collateral considerations may prescribe incremental de-
velopment programs for some organizations, while others may be able to
undertake larger-scale ventures. Where a project is very large, the
simple unavailability of skilled workers and supervisory personnel may
imply staged construction. One such example was in the programming of
a renovation program for a brownstone area of Brooklyn. Constructional
capabilities set both upper and lower limits on how many units could be
renovated each year: the minimum number was determined by weighing the
costlines of training tradesmen for this complicated work and determin-
ing the minimum number of units over which this cost could be written
off; the upper limit represented the capacity of that pool of skilled
workers.[9]

Marketing or start-up problems may also set limits on the package.
In the case of Chandler Village, teh College's estimate of the number of
housing units it could absorb each semester during the start-up period
led to the need for staged construction. Similarly, in planning a new
community, the rate at which construction and marketing can occur, while
maintaining the sense of a "finished" community frequently is a beginning
point for deciding upon the development packages, and later the physical
pattern. Thus, it is important to make an initial appraisal of institu-
tional capabilities as part of the package analysis.

Even having firmly in mind time and institutional constraints, logistical problems may intervene to determine the shape of the environmental package. Renovation of environments usually means displacing someone while construction occurs; that may need to be taken into account in programming. If new development is to occur over long periods of time, it may be important to buffer early occupants from the disruption of ongoing construction. In turn, that may imply subdividing the package into self-contained units. The necessity to obtain advance approvals may effect both the process and substance of programs. If a city requires (as most do) a binding commitment to the amount of open space to be provided in a planned unit development, an overall ceiling on the quantity of development may be set for years into the future. The most complex logistical issues are usually raised by projects which invovle the demolition and replacement of facilities in intensely built-up urban areas. Where specialized equipment is to be housed, the possibility of a single move rather than temporary relocation may be decisive in determining the development package. Every project will have its own special logistical problems, but a common technique for analyzing their impact is through charting the critical path to completion of the project. Often the earliest stage of package analysis is not too soon the begin sketching this process.

Finally, the technologies available, and the ability of key institutions to utilize the, may play a role beyond that of determining the manangement capabilities or compliance with codes and standards. The obvious example is constructional techniques: a process design which implies winter construction may bump against technological limits;

certain techniques and practices may be more available locally than others; undertainties of timing and quality may make particular technologies hazardous. Usually these issues are more crucial as the outlines of a design emerge, but the programmer can serve a valuable function by identifying potential sources of difficulty during early deliberations.

III

If deciding upon the environmental package is generally the least imaginative, yet most influential activity of environmental programming, it is not because opportunities are lacking for innovation. More often, it is because decisions which deal with economics, or management or standards are considered the baliwick of experts and tehrefore immune to contributions from the ordinary man. Yet, as I have noted, there is nothing magical about such decisions; creativity can come from many courses.

One fruitful technique for inviting contributions to package decisions is to disaggregate the project into smaller sets of decisions that are more meaningful to everyday users of environments. In programming a school, for example, each teacher might be allotted an environmental "budget" and be asked to allocate it among fixtures, spaces, even the transportation needed for field trips for his students. The programmer might serve as a resource by helping to cost various options being considered, and by illustrating the consequences of choosing one as opposed to another package.

There are at least two examples of using such an approach in programming for housing design. In their Peruvian housing project, the Center

for Environmental Structure of Berkeley, California, prepared a choice-sheet for prospective residents, outlining various options for the spatial package of their homes and assigning costs to each.[10] Beginning with the overall budget of what they could afford, people were invited to compose the packages they considered desirable. In a similar vein, Patricia Shanahan has devised a game called the "House of Cards"-- a deck of playing cards with environmental features and their costs-- which prospective homebuyers use to compose an affordable house.[11]

These attempts have only scratched the surface of possibilities Rather than adopt fixed space standards for each inhabitant of a building, large institutions or corporations might set only gross space targets and provide assistance to the occupants in deciding upon allocations to meet their varying needs. Instead of prescribing rigid minimum standards for areas to be reserved as open space in new developments, regulartory agencies might allow the dollar value of such spaces to be reallocated (to facilities, for example) as long as the developer can demonstrate that more people are likely to benefit from the recreation opportunities thus provided. The shifts that are possible by re-examining fixed conventions will undoubtedly lead to more varied packages better tailored to the needs of their occupants.

A second approach to innovation in package decisions involves the creative use of precedents, not for slavish emulation, but in terms of how the examples might have differed if other circumstances had been present. Environments that apparently are failures can be as useful as success stories. What would it take to transform that underutilized

space into one which was lively—should it be larger or smaller? would

new institutional arrangements have ensured its use? would new forms

of activities have helped—what kinds of activities could successfully

occur in it? Or, for an apparently successful older shopping area:

could the same results have been achieved if it had been developed at

one time? what arrangements would be essential to ensure that it de-

velopes in a successful way? Or, in still a third instance, the impor-

tant questions might probe how rearranged institutions might have

opened new design possibilities. How might the population mix and

physical arrangements of a particular housing development have differed

if all land had been retained in collective ownership rather than sub-

divided?

Such probes are often diffcult because journalistic accounts of

significant environments are almost totally unrevealing of the circum-

stances under which they developed. In developing the new community

of Cedar Riverside, for example, the construction of an elevated pedes-

trian deck (above a parking garage) which serves as the "main street"

of the community hinged almost entirely on the creative packaging of

of governmental and private financing programs—a fact that is nowhere

evident in the score of published accounts of the project. In a larger

sense this speaks to the need for new forms of reporting for environmental

programming. But, more immediately, creative conjectures about prece-

dents can direct the search for information.

Finally, a third among many approaches to innovation in environmental

packaging is to begin with a problem or difficulty and to allow other

details to fall into place as it is resolved. Often such difficulties

relate to the capacities of key facilities, and some foresight is required to identify them at an early point. Restricted access to an area to be planned for housing development is one such example. The programmer might ask: what if it were resolved by garaging all private vehicles at the entrance to the site and developing a system of transit from that point? How many housing units owuld then be required to support the system? What types of individuals and households might be most attracted to such an arrangement? Or alternatively, the consequences of creating a heavily transit-dependent community might be explored; a different package would undoubtedly be suggested? And so on; the outlines of the most desireable package will emerge from successive probes. The dialogue will be aided immeasurably by inviting suggestions from those who will use as well as provide the environmental package.

Footnotes - Chapter 4

1. For some rules of thumb, see: "The Village Shopping Center," House and Home, February 1973, pp. 57-69.

2. See Morton Hoppenfeldt's analyses for the new community of Columbia, Md., published by the Rouse Corporation.

3. The Kraenert Center at the University of Illinois, Urbana, is a cogent example.

4. Notable exceptions: Hoppenfeldt analysis for new towns, DeChiara and Koppelman's Planning Design Criteria, etc. Where these have been set down, as in the APHA Residential standards and NRA Open Space standards, they have had overwhelming effect on practice, often to the dismay of their framers.

5. See Philip David, Urban Land Development,

6. For an excellent example of rigorous cost-benefit analysis -- which relies on imputed figures, see Arthur Solomon,

7. See T.A. Davis, "Evaluating for Environmental Measures," EDRA4 Proceedings, 1972.

8. Arrowstreet, Inc., Streets for People: How to Use Them, A report prepared for the District of Columbia Urban Renewal and Land Agency, 1974.

9. Gruen Associates, Inc., St. Marks Place Housing Program, Brooklyn, New York, 1966.

10. Christopher Alexander, et al., Houses Generated by Patterns, Berkeley, Center for Environmental Structure, 1969.

11. Patricia Shanahan, Woodroffe User Needs Study, Reston/Shanahan Associates, 1975.

CHAPTER 5: ENVIRONMENTAL PATTERNS

The two- and three-dimensional form of the environment is normally
thought to be the designer's province. But a programming process which
avoids talking directly about intentions for environmental form is almost
always incomplete. For one reason, package decisions inevitably are
keyed to images of how the environment might be arranged: commercial
spaces must be on the ground floor of an office structure to yield the
assumed rentals, a shopping area must be visible from the main entrances
to a housing development to rent the stores, parking located below a
public open space is necessary to achieve the desired density—all are
typical assumptions which might underlie a package prescription. To
arrive at an accurate estimate of the package, rough schematic arrange-
ments may need to be sketched. It makes sense to record these in some
form, especially if there are gaps in the process of moving from pro-
gramming to design. And recording can allow experience to accumulate
from project to project.

A second reason is that a programming process—especially if it in-
volves users of the prospective environment—will uncover a myriad of
arrangements which people feel are valuable. Environmental forms are
more concrete and more readily grasped than abstract notions such as
areas, administrative arrangements, or performance levels. Yet, often
these patterns are lost, because the programmer believes they are overly
specific. The participants may say (as students did at Worcester Col-
lege), "The buildings should be arranged like houses along a street."
This is a statement about a particular environmental pattern; it can be

abstracted as several testable statements about performance ("Buildings should be residential in scale and should define a public access space."); it might also be accounted for in estimating site areas, and drafting other package proposals. But it would be a mistake to gloss over the essential relationships the participants had in mind when they said, "street", to simply abstract in verbal and quantitative terms some aspects of that image may dilute the Gestalt. Diagrams, photographic analogies, and other visual devices may be necessary to convey what is meant. Pattern notions require techniques that describe the essentials of form.

I

What constitutes an environmental pattern? When is one worth recording, and when is little to be gained by doing so? When is an environmental pattern the best way for conveying information, and when would a performance statement or a package estimate be better? The three questions are closely interlinked.

Patterns deal with relationships in space—human-environment relationships. They presume a certain routineness of behavior and attitudes, as for example, the notion of "houses along a street" presumes that people will be using the area considered a "street" for passing to and from the area, that the setting "street" is widely understood and recalls a class of appropriate behaviors, and so on. But there are, after all, thousands of ways that houses could be located along a street and, to be useful to a designer, a statement of the pattern "houses along a street" would need to make clear the particular ingredients of that image for this problem.

Some of these might be the shape of the space (when does a street become too wide to work?), the presence of entrances along it (should they be visible or not?), the scale of structures along it (must they be spatially separated, or could they be read as "townhouses"--and what would it take to make them seem to be independent houses?), the numbers of people moving through space, and a host of other factors.

Thus, a pattern will have geometrical properties and, as well, reveal details about size, scale, extent, and the presence of certain facilities. It will be tailored to a particular context, although it may be reusable elsewhere if the context is sufficiently similar. An important issue in thinking about patterns is the generalizability of the solution, or stated in the reverse, the limits of its transferability. It will be related to particular human purposes, or to a particular problem. Patterns are always normative--not any old solution, but the best one that can be found for the problem. But it may not be the only solution; the act of designing may discover other ways of better accomplishing the same ends.

One format for environmental patterns has evolved from the work of the Center for Environmental Structure (CES), under the direction of Christopher Alexander. Built on his earlier work which sought to identify optional ways for disaggregating a design problem into tractable sub-problems,[1] Alexander refers to patterns as "the atoms of environmental structure."[2] He describes their preferred format for writing patterns as follows:

"A pattern defines an arrangement of parts in the environment, which is needed to solve a recurrent social, psychological or technical problem. Each pattern has three very clearly defined sections: context, solution and problem.

The context defines a set of conditions. The problem defines a complex of needs which always occurs in the given context. The solution defines the spatial arrangement of parts which must be present in the given context in order to solve the problem.

If the needs in the problem are correct, and do occur as stated in the given context, then this arrangement of parts, or an equivalent one, must always be included in any design for the given context. Any design for this context which does not include the pattern, is failing to solve a known problem.

This does not mean, of course, that patterns are absolute. The rightness or wrongness of a pattern is an empirical matter, and as such is always open to further observation and experiment. For this reason, we have tried to state the observations and evidence behind the patterns as clearly as possible, so that they can be checked by others, and rejected when incorrect." 3

The following page reproduces one example of the 1,500 patterns which CES has accumulated through its work on several dozen projects of various kinds in a number of locations. Their format emphasizes the conjectural nature of patterns (which is not to say they are ungrounded by evidence) and invites others to contribute to, refine, or contradict them based on more detailed study. Their early writing was explicit about the conjectural form:

"In full, the statement of each pattern reads like this:

IF:X   THEN:Z / PROBLEM:Y

X defines a set of conditions. Y defines some problem which is always liable to occur under the conditions X. Z defines some abstract spatial relation which needs to

Tiny Parking Lots

Large parking lots aggravate the feeling that cars are dominating our environment.

Large parking lots create an impersonal, institutional atmosphere. They make the pedestrian feel dominated by cars; they separate people from the pleasure and convenience of being near their cars; and, if they are large enough to contain unpredictable traffic, they are dangerous for children, since children inevitably play in parking lots.

It is hard to pin down the exact size at which parking lots become too big. Our informal observations suggest that parking lots for four cars are still essentially pedestrian and human in character; that lots for six cars are acceptable; but that any area near a parking lot which holds eight cars, is already clearly identifiable as "car dominated territory".   (continued over)

6 cars   Residential Area
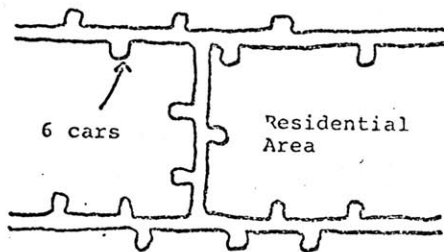
Therefore: Break up parking lots in residential communities to separate tiny parking lots each holding no more than six cars.

Problem (continued)
This may be connected with the well-known perceptual facts about the number seven. A collection of less than 5-7 objects can be grasped as one thing, and the objects in it can be grasped as individuals. A collection of more than 5-7 things, is perceived as "many things". (See G. Miller, "The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information", in D. Beardslee and M. Wertheimer (eds.) Readings in Perception, New York, 1958, esp. p. 103.)

It may be true that the impression of a "sea of cars" first comes into being with about seven cars.

Critical Experiment:
Look at parking lots of different sizes. Notice which sizes are so big as to give you an impression that you are in a car-dominated environment, and notice what sizes are small enough to that the cars do not seem more important than anything else around you. Try to determine the threshhold.

Context
This pattern applies only to parking lots exposed to pedestrians. It is especially crucial in keeping residential areas "residential", i.e., human. The principle (not the pattern) should however apply to downtown areas too: Inasmuch as the number of cars in parking lots would have to be much larger, something should be done to play the cars down. The lots should be somehow sunken, covered or hidden.

---

be present under the conditions X, in order to solve the
problem Y.

In short, IF the conditions X occur, THEN we should do Z,
in order to solve the problem Y." 4

The work of CES has demonstrated the transferability of patterns

among widely different design situations, and they have emphasized, in

turn, the value of cataloguing patterns which are tied to broadly recurrent

human problems. For example, the pattern "Tiny Parking Areas" was origin-

ally composed for a low-income housing area in Peru; it has since been re-

used in campus planning for the University of Oregon and in other projects.

Often, a pattern goes through several stages of generalization, beginning

as a particular response to a particular context, and only later is dis-

covered to contain elements which could apply more broadly. Fred Osmon,

in a book of patterns for children's centers modelled on the CES format,

explains:

"Some patterns suggest a variety of concrete solutions to
solve a particular problem rather than presenting the ab-
stract geometry (the pattern) that would represent the
general solution to this problem. This occurs when I have
not been able to state the required geometry. Instead,
a cross-section of solutions is provided that imply a
general solution." (parenthesis his) 5

This is as it should be; the important contribution of the CES pat-

tern format is that it encourages others to improve patterns through their

use, to probe for the general rules which underlie the particular state-

ments.

In metaphorical terms, the use of patterns by the CES is described

as a "language" for designing, a "Pattern Language."[6] But the metaphor

also reveals one of its important weaknesses; the implication that a voca-

bulary composed of <u>nouns</u> (state descriptions), however expansive, can ever

provide the basis for a complete statement of a program. Two examples will

illustrate. "Size based on population" is a pattern proposed for multi-

service centers, as follows:

> IF: A multi-service center serving a population of N
> persons, THEN: The multi-service center contains .3N
> square feet of service space, .15N square feet of space
> for core services, and .45N square feet devoted to
> meeting rooms, circulation, self-service, arena and
> other ancillary spaces. The total floor area of the
> multi-service center is .9N square feet. All figures
> to be taken ± 20 percent. [7]

Continuing the metaphor, this "pattern" is a <u>verb</u> and the information it

contains is uncomfortable in a format designed for nouns. Two-way tables

are required to account for variability in the problem statement. Forcing

this into a single summary statement glosses over the many choices about

programs, investments and operations. The issue is essentially how to

make a package estimate (as the previous chapter describes) and the pro-

cess would be better served by prescribing a way to take account of the

many factors which will influence the estimate.

A second example, "Sunshine in patios," illustrates the difficulty

when a noun is substituted for what should be an <u>adjective</u>:

> <u>Context</u>: Any patio house in Lima
> <u>Solution</u>: Three rules apply:
>
> 1. All north and south facing openings are protected
>   by an overhang which is 21 percent of the height
>   from window sill to overhang.
> 2. No opening is exposed to the west.
> 3. One patio is long in the north-south direction—
>   its length at least 73 percent of the height of
>   the north wall--and one livingroom faces north
>   into this patio. [8]

As I shall describe in the following chapter, this pattern is essentially a statement about building performance, where the important choices relate to what human activities are to be supported by the setting and, most critically, what the desirable level of support should be. For instance, the rules above are based on the assumption that every patio should have sun on its ground surface on the day of the winter equinox. Surely to know whether or not this is a reasonable standard one must know something about possible patio activities and how they are aided by the presence of sunlight. The issue is what constitutes a sunny place and where one is required, not simply a set of rules for the shape of patios. By enforcing a single set of rules, and thereby drastically restricting the kinds of acceptable solutions, the designer must rethink the entire logic if it proves impossible to meet the tests. Yet the tests may be wrong or incomplete, not the intention, and he needs a different kind of information to judge whether or not that is so.

While these two examples demonstrate some of the limits of pattern language—especially its insistence on transcribing all information into a single format—the process of its use has evidenced its power: patterns force circumspection about problems, and about why some environments seem to serve their occupants well; they provide a creative way to draw from precedents; and the consistent format aids in the accumulation of experience. The work has remained at the scale of individual atoms of environmental solutions, springing from the notion that designing is primarily (even optimally) a process of building a solution from valuable parts.

But many examples of good environments were the product of thought which began first with an overall gestalt: can programming also aid that way of working?

At this opposite extreme is a longer tradition of environmental design--the invention of prototypes, conveying ideas not as individual threads, but cut from the whole cloth. The pervasive influence of Wright, Le Corbusier, Kahn, the CIAM group, and later, Team 10, can be explained, at least in part, by the powerful paradigms of environmental form they offered.[9] It is not simply that Ville Radiuse,[10] to choose one example, solved well the problems of separating automobiles from pedestrians, or locating shopping near housing, or allowing light to penetrate into apartments. Far more important was that it offered a way of thinking about the design of each of a community's components, a self-consistent system of logic which allowed the details to flow from the whole. Indigenous cultures, as many have noted, develop over long periods equally persuasive prototypes of environmental form.[11]

Sometimes the development of a prototype is the most effective way to do environmental programming. It may communicate intentions about patterns at a variety of levels. If accompanied by a description of design criteria (performance requirements), it may suggest where adaptations are needed because of the context where it is being applied. It can pinpoint how to change the prototype when evidence of use demands.

One contemporary example of a useful programming tool is the Low Rise High Density (LR/HD) prototype, prepared by the Institute for Architecture and Urban Studies and the New York State Urban Development Corpor-

Organizing Issues and Prototypical Elements

This prototype based on the constraints of a typical 200 foot by 800 foot New York City block was designed to establish the following conditions.

1 To group dwellings on the block in such a way as to both preserve the spatial profile of the street and at the same time to create a sense of neighborhood.

2 To arrange for as many private entrances as possible to open directly off the street and at the same time to minimize undesignated internal space.

3 To control the size and location of play spaces for young children and to provide for their direct surveillance from the dwelling.

4 To minimize unseen-non-active places and to promote easy recognition of neighbors, through limited access and the provision of 'spontaneous' surveillance over entry to the cluster.

5 To provide private exterior spaces (yards) for as many units as possible and to clearly define and articulate in respect of use not only public and private spaces but also semi-public spaces such as stoops.

6 To provide accessible and secure storage for bicycles, carriages, snow tires, etc.

7 To assure reasonable orientation for at least one living space plus through ventilation for all units.

8 To provide at least two separate living spaces for the larger family units so as to allow for the separation of different living activities and to accommodate certain variations in life style.

9 To limit the walk up access to two and one half floors from the street level to the highest and smallest apartments.

10 To limit walking distance from parking space to unit to somewhere within the neighborhood of 100 feet.

As projected the prototype was to consist of four main elements: the street unit, the mews unit, the mews itself and the public stoop in relation to the inset parking.

STATE OF THE ART HOUSING

LOW RISE HIGH DENSITY HOUSING

	STATE OF THE ART HOUSING		LOW RISE HIGH DENSITY HOUSING
	expensive exterior areas no domain or spatial definition large user population minimal recognition of neighbors	1 SENSE OF COMMUNITY	cluster dwellings to encourage neighborhood limit numbers of users of semi-private spaces visual recognition & interaction organize common activities to promote social interaction
	no visual or aural contact children play areas remote from dwelling difficult to assign or find children	2 CHILD SUPERVISION	control size & location of play areas maintain visual & aural contact maintain proximity to play areas provide private exterior spaces
	minimal recognition of neighbors dangerous elevators, corridors & yards unseen and inactive spaces residents isolated from activity	3 SECURITY	minimize unseen, non-active places promote recognition of neighbors maximize activity & overview of common exterior spaces define public & private outdoor spaces
	upkeep of elevators, lobbies & corridors undesigned territories & responsibilities children play in circulation materials offer minimal resilience	4 MAINTENANCE	minimize undesignated interior space design common spaces for activity with resilient & rugged exterior surfaces provide direct, individual access
	no useful private exterior space no private outdoor storage isolation from social gathering places many units with no direct sunlight or through ventilation	5 LIVABILITY	provide private exterior spaces provide accessible & secure storage for bicycles & carriages assure sunlight & thru-venting in all units
	blocks sun to outdoor spaces blocks views to outdoor spaces usually out of scale with neighborhood inappropriate to needs & expectations of users identifies low income populations visually	6 RESPONSIVENESS TO CONTEXT	respect scale, light & views of existing context define public & private outdoor space reflect aspirations of users integrate buildings visually hold existing street lines
	dwellings force single lifestyle on all users room usage rigidly fixed unresponsive to site variations appropriate only for narrow range of sites	7 FLEXIBILITY	allow varied use of spaces for alternate life styles devise application of building elements for range of sites articulate outdoor space for multiple uses

STREET UNIT — SMALLER UNITS, HARD EDGE TO STREET, LIVING SPACES VIEW STREET — PRIVATE YARD — STREET

MEWS UNIT — LARGE FAMILY UNITS ADJACENT TO CHILDS PLAY WITH ADULT SITTING PORCH, PRIVATE ACCESS — PRIVATE YARD — PRIVATE ENTRY — PORCH

MEWS — PROVIDE SPACE FOR LIMITED NUMBERS OF RESIDENTS TO PROMOTE RECOGNITION — ENTRY LOCK — PORCH — TOT PLAY AREA

PUBLIC STOOP — ACCUMULATE OVERVIEW & ACTIVITIES AT ENTRY FOR SECURITY — LAUNDRY — PARKING — ELDERLY UNIT — ENTRY LOCK — STREET
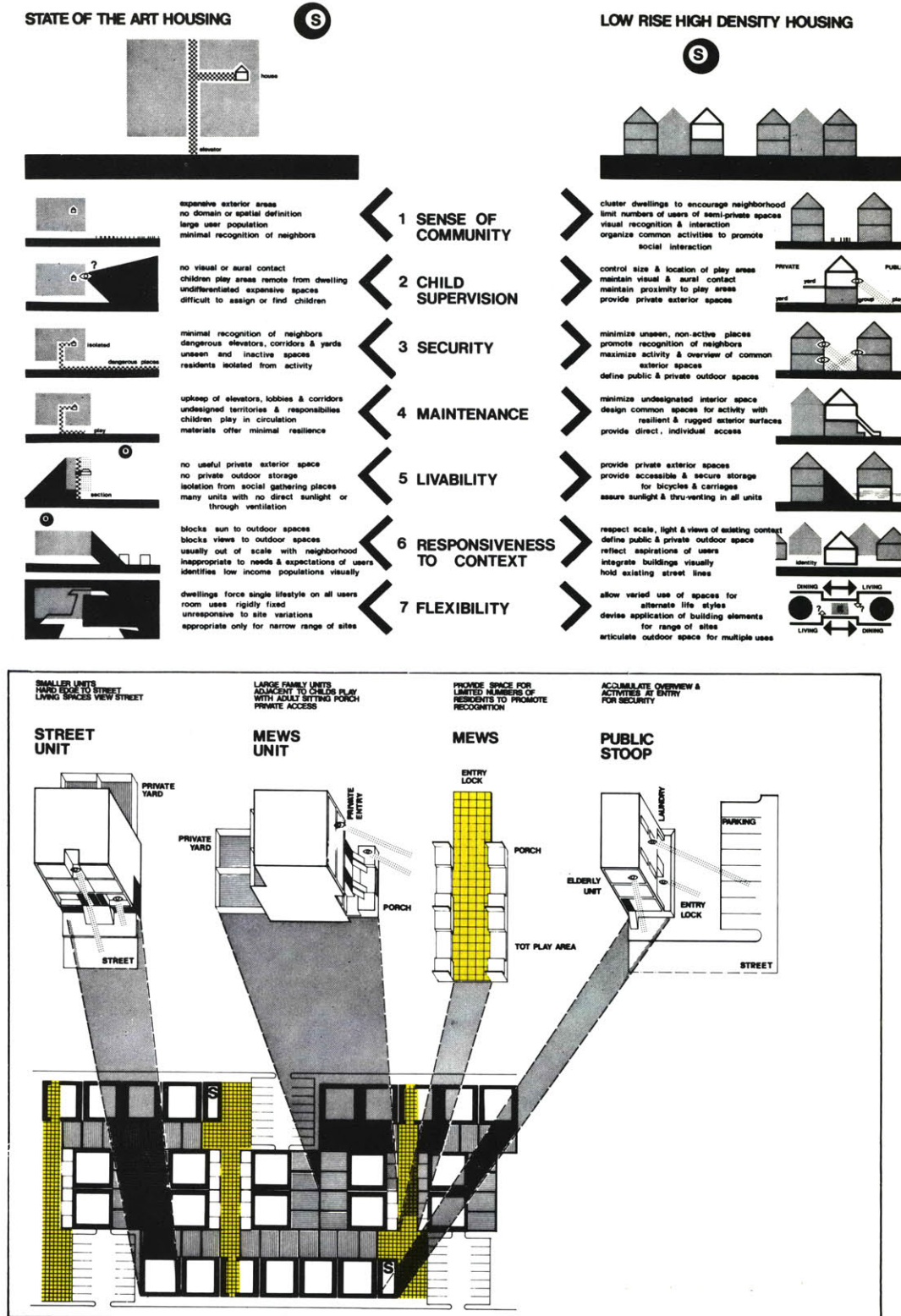
FIGURE 14: Essential Elements of the Low Rise/ High Density Prototype

ation.[12] The key components of the prototype are presented in Figure 14.

LR/HD grew out of the needs of the Urban Development Corporation to:

quickly make package assumptions about the numbers of units which could be

accommodated on a site, the per-unit and site costs, the costs and forms

of management of housing, and the scheduling of construction; communicate

a set of patterns desired by UDC to a range of architects, community

groups, prospective tenants; accumulate, over time, enough experience with

particular environmental patterns to know whether or not they were the

right forms for housing. Designs based on the prototype are being built

on several sites. Each has been adapted to its particular context, but

all of the projects share a familial resemblance, because they retain gen-

eric patterns of site and unit organization.

Interestingly, the Urban Development Corporation (UDC) did not begin

its programming operations with the view that a prototype would be either

required or desirable. During the first several years it sought diverse

approaches to housing design. A several-page list of design criteria, a

set of conceptual sketches done by the UDC staff, and a thoroughgoing re-

view process were the principal means of communicating intentions. They

hoped that each architectural design would contribute new insights which

could be re-used in successive projects. But the results were uneven.

Some designers brought extensive experience, were new to the field of

housing design. Design review sessions, for the novices, became an expen-

sive form of tutorial that began to seem like a broken record. The UDC

staff, through a live-in program that gave first-hand exposure to their

completed housing, soon found that they had much more to communicate than lists and the spoken word would allow. At that point, a formal prototype seemed an efficient way to summarize what they knew. The investment to produce a prototype was a minor cost compared to their ongoing operations.

While few organizations are able to repeat their work as often as the UDC, in informal ways the design which evolves out of one programming project often provides patterns which are the starting point for another project. The housing types which flowed from the programming effort at Worcester were repeated a short time later at a second college. The patterns of community organization which grew out of programming studies for the new town of Milton Keynes, England,[13] were re-used and adapted in the town of Shanedoah, near Atlanta, designed by the same firm.[14] Most design organizations develop implicit prototypes by carrying ideas from project to project. But one problem is that there is no easy way to communicate these models and their attendant assumptions, data, or observations, aside from project documents with limited circulation, and the occasional scholarly article[15] (often with an equally small audience!). When such information is available, even in a sketchy form, it is heavily used. An evaluation of the Planning and Design Workbook for Community Participation, which consisted partly of a catalogue of housing site patterns, revealed that its largest usage by far was as a pattern reference book. Among the many criticisms about the publication was its lack of detail about the context from which examples were drawn, and about the standards and criteria that applied to each.

Prototypes can also be misused, of course. They can be taken out of context, fitted to problems where they do not apply, used as an excuse not to learn about clientship for a particular environment. The danger is greatest when rhetoric claims their universal applicability. A useful exercise in explaining a prototype is to say where it does not apply, giving equal time to exceptions as well as the rule. Explaining fully the problem they are intended to solve is also helpful. Vague references to "user needs," or to "organizing issues"[17] are seldom revealing about whether or not the prototype is applicable. The lack of documentation also limits the ability to improve a prototype based on its performance, because it is impossible to link intentions to specific environmental details.

Pattern language and the programmatic use of prototypes suggest partial answers to the questions of when it is useful to record and communicate patterns. Clearly, they are most appropriate when there is agreement about what is expected of an environment (the level of performance) and where the issue is finding the best way to accomplish this in spatial terms. The greatest incentive for precise recording of patterns occurs where there is a high probability of repeatedly encountering similar design problems. Regardless of whether the scale of a pattern is an individual "atom" of environmental form or a whole prototype, important components of pattern description are statements of its context and the problem it is intended to solve.

II

Where should environmental patterns come from? Alexander and Poyner

emphasize the difficulty of making a direct leap from what people say they

"need" to a desirable environmental pattern:

> But how do we decide that something is really a need? The
> simplest answer, obviously, is "Ask the client." But people
> are notoriously unable to assess their own needs. Suppose,
> then, that we try to assess people's needs by watching them.
> We still cannot decide what is "really" needed. . . because
> the concept of need is not well defined. . . . When it is
> said that people need air to breathe, it means that they will
> die in a few minutes if they do not get it. When someone says,
> "I need a drink," it means he thinks he will feel better after
> he has had one. When it is said that people "need" an art
> museum, the meaning is almost wholly obscure. . . . We shall,
> therefore, replace the idea of need by the idea of what people
> are trying to do. We shall, in effect, accept something as a
> need if we can show that the people concerned, when given the
> opportunity, actively try to satisfy the need. 18

They label this active force a behavioral "tendency." Patterns, they argue,

ought to be a cataloguing of tendencies, to be validated by repeated obser-

vations of whether people choose in the same way in a variety of situations.

The problem of design, then, is to create settings where tendencies do not

conflict. They continue:

> Faced with a relation (which they later called a "pattern"),
> the designer must either accept it or show that there is a flaw
> in one of the hypotheses. Whatever he does, he cannot merely
> reject the relation because he does not like it. The body of
> known relations (patterns) must, therefore, grow and improve. 19

Their point is clear: Trust what people repeatedly try to do, not

what they say. Utility theorists also discount what they refer to as "con-

sidered responses"--expressions of desire taken out of the context of

trade-offs and choice. Indeed, direct observations <u>are</u> a fruitful source

of environmental patterns. When we find places that work in terms of their occupants, where tendencies do not conflict, or where we find adaptations that are repeatedly made, these are worth recording. They need not be reinvented. But to trust nothing of what people say they want is a totally skeptical view of human desires. People may wish to change the ways they behave, to experiment, to explore. They may never have experienced environments they would like, only knowing of them second-hand. These, too, are "tendencies" worthy of attention. Moreover, how people express what they want may be an important source for inferences.

In the program (see Chapter 9), participants were asked to draw their image of an "ideal neighborhood". The results were marvellously varied (see Chapter 10 for a detailed analysis), but several stand out as being almost entirely inaccessible from either observations of the individual's current life patterns of a literal reading of their drawings (see Figure 15). One woman drew a large area at the edge of her neighborhood and labelled it "Hawaii." A teenage boy's image was not a neighborhood at all, but rather a loose collection of forms along a street. Several resembled liquor bottles—"my pad," "Seagram's Lake," "Flask Park," "Free Juice Store." Others were equally evocative (or provocative to people his parents' age): "Furburger House," "Boobs Ballroom" (crowned appropriately by two domes), etc. What should one make of expressions such as these?

During the discussions which ensued, the woman noted that the neighborhood was "confining," that there was no place to get away, that the neighborhood had no "glamour." Although she had never been to Hawaii,
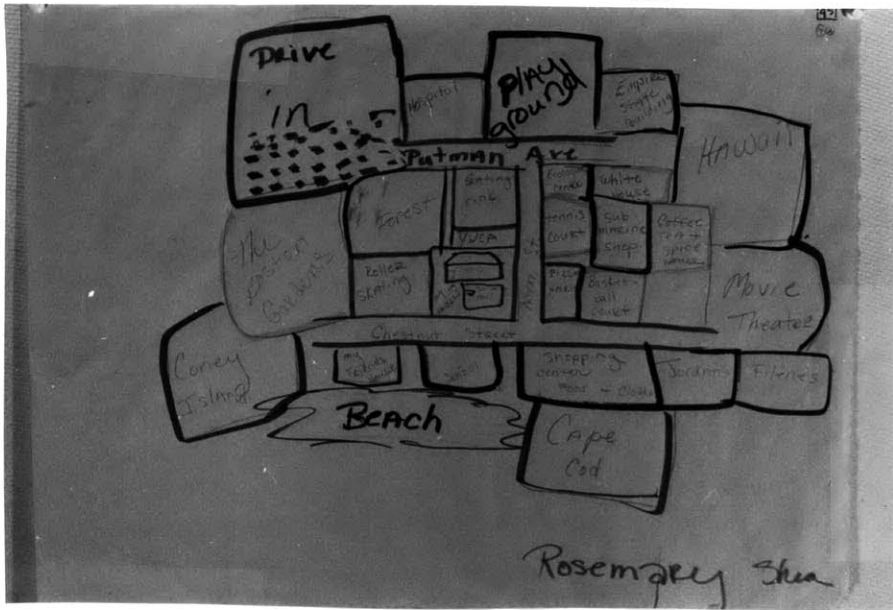
Mother's Ideal Neighborhood
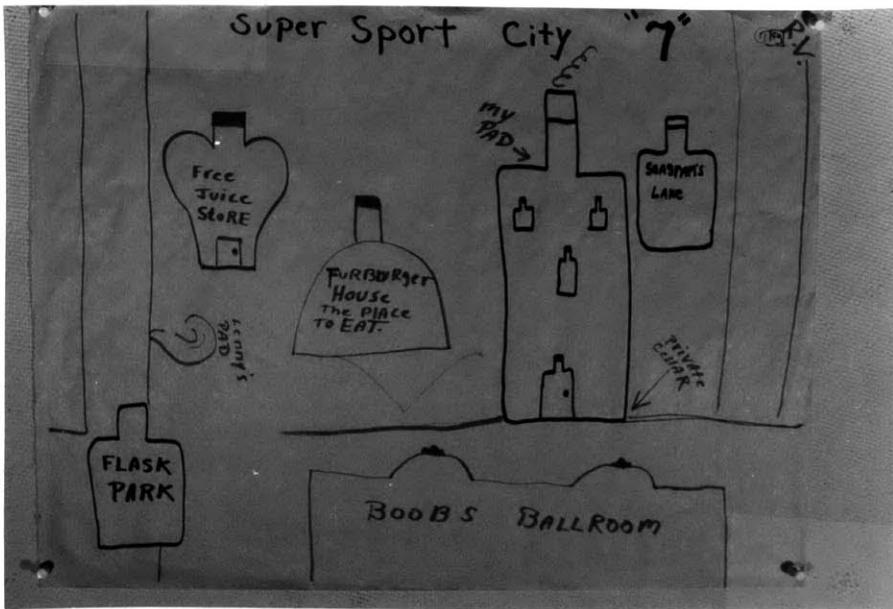
Teenager's Ideal Neighborhood

FIGURE 15: Images of Ideal Neighborhoods

from what she had heard it somehow embodied all that the neighborhood lacked. The teenager confided that the places he inhabited always seemed to have to be "respectable" in adult terms; they never "said" what they were; they "masked" their real activities. And he wondered why they always had to be "hiding" from addults--why couldn't they be accepted on their own terms? Clearly, the drawings and the words they used to describe them, were metaphors, for tendencies extremely important to their authors' behavior.

The role of metaphors as a bridge to environmental patterns is a much neglected area of thought. Donald Schon refers to these as "generative metaphors"--constructs capable at once of highlighting a problem and evoking solutions.[20] He suggests that designers pay attention to the way people describe a situation, not simply what they describe. Working in the area of social policy design, Schon uses the technique of "storytelling" to tease out people's metaphors of situations. "Tell me a story about that service system," he asks; then he closely observes the terms they use. If a service is described as "fragmented," he asks what the storyteller understands by that, probing backwards to discover the basis of their diagnosis, then forward to help invent prescriptions.

When architects describe their work, it is often in terms of the generative metaphors that led them from a statement of wants to an image of solutions. The notebooks of Louis Kahn are an excellent example:

> The client asks for areas, the architect must give him
> spaces; the client has in mind corridors, the architect finds
> reason for galleries; the client gives the architect a budget,
> the architect must think in terms of economy; the client
> speaks of a lobby, the architect brings it to the dignity of
> a place of entrance. 21

> The motor car has completely upset the form of the city.
> I feel the time has come to make a distinction between the
> viaduct architecture of the car and the architecture of man's
> activities. . . . Viaduct architecture would include the
> street which, in the center of a city, wants to be a build-
> ing--a building with room beneath for city piping services
> so that traffic interruption will not be necessary when these
> services need repair. This viaduct architecture would en-
> compass an entirely new concept of street movement. It would
> make a distinction between the stop-and-go movement of the
> bus and the go-movement of the car. The area-framing express-
> ways would be like rivers. These rivers would need harbors,
> and the interim streets would be like canals, which need
> docks. The terminal buildings of this viaduct architecture
> would be the harbors--like gigantic gateways expressing the
> form of the Architecture of Stopping. These terminals would
> have garages in their cores, hotels and department stores
> around the periphery, and shopping centers on their street
> floors. . . . Such a strategic positioning around the city
> center would present an ideal protection against the destruc-
> tion of the city by the motor car. . .   22

Kahn's metaphors--corridors that are "galleries," lobbies that "have

the dignity of a place of entrance," the "viaduct architecture" of the

automobile, the street which is a "building," the defensive form of a cen-

ter city "for protection against destruction by the motor car"--are not

simply glossy descriptions of what he has designed. His sketches reveal

that the process of designing was, for him, a search for metaphors that

encapsulated his feelings about what an environment ought to be like.

Once found, the metaphor has enormous power. By analogizing to other situ-

ations which the metaphor also fits, many of his patterns emerge. Thus,

if the city movement system ought to be patterned, according to the logic

of a viaduct system, it follows that "expressways would be like rivers"

which then need "harbors," "interim streets would be like canals, which

need docks," and so on. By carrying each analogy still further, the

shape and functioning of each of these elements may be roughly sketched.

While no single working method is used by all designers, the most creative often use metaphors and analogies.

What occurs during design may often be aided during programming by searching for metaphors, analogous solutions, and then patterns tailored to the context. The process need not always be linear; sometimes the underlying metaphor can only be deduced from a set of analogies or examples which all seem to speak of the same thing. During the project, participants were asked to photograph meaningful aspects of their current neighborhood. For many young college graduates living there, the photographs seemed to say that Cambridgeport was a "garden," a place for growth and change, for gradual succession tied to its residents' seasons, where many new personal and collective enterprises could germinate. The metaphor of older residents was generally quite different. They saw the area as being "eroded" by its new residents. Their photographs showed what remained of the distant past, and they spoke negatively about changes. Often the same physical evidence supported the two opposite metaphors. The two groups could not agree on proposals until each accepted the sincerity of the other's view.

The leap from metaphor to pattern is never direct, and analogies can be helpful in clarifying both. But how do we know whether or not a metaphor is accurate? If the same evidence may be translated to mean two or more quite different things, a metaphor is seldom either simply "true" or "not true." If opposite constructs are widely believed and people behave as if they were true, they must at least be taken into

account; patterns may be found which satisfy both. The solution must also seem "right", not just the metaphor. Kahn's "rivers" may characterize flows in the city pattern but may be totally inaccurate in dealing with the process of development, and his solutions warrant criticism on those grounds. One group may come to see that another's model of the situation is more supported by evidence and may change its attitudes. A second issue, though, is the usefulness of metaphors. However compressed, they are a form of theory and some theories are clearly more useful than others. The most useful metaphor may be one which evokes many analogies-it has the power to recall much. What distinguishes Louis Kahn's work is that almost anyone can build upon his metaphors.

The translation process from metaphor to pattern is complicated by having to disentangle the wide range of meanings people assign to their environments. Places may be valued because of their use meanings, because they are comfortable, sensuous, safe, convenient, or in other ways supportive of desired behavior. But they may also value symbolic meanings, embodying symbols of self, class membership (real or desired), or social hierarchy. The internal patterns of housing in many Latin American cultures hinges on the issue of creating a symbolic procession from public to private domains, with each step clearly distinguished—the most public area, the sala, is located at the front; the kitchen, the most private area, is located at the rear.[23] Where this pattern is violated, the result may be as dysfunctional as rooms which are ill-suited to their occupants' uses. A third type of meaning is iconic. Aspects or

patterns of an environment may be valued in direct terms, there may be no substitutions possible. Just as the Christian cross is widely recognized as an icon, so too the suburban front lawn. Some signs and symbols of commerce (MacDonalds' arches, Holiday Inn's neon sign), the mansard roof, and the tree-lined street may not be discountable. Often, programming centers exclusively on issues of use, neglecting a host of symbolic or iconic patterns which might be equally important.

To summarize: Direct observations of people's environmental tendencies--the choices they make when they are free to structure their settings as they desire--are an important source of environmental patterns. But much can also be gained through dialogue, by paying attention to how desires are expressed, particularly to the metaphors used in description. These metaphors can aid the designer by focusing his search for proposals. Places that are, though, analogous to what is sought may be useful in pointing to attributes of the desired pattern. And how an environment is to be used is only one basis for patterns; a richer program results when the symbolic and iconic qualities of environmental form are also taken into account.

III

Patterns which may be important to the eventual quality of an environment are often overlooked, or left unrefined, or lost in the

translation of program into design. Frequently, the failure stems
from unfocused discussions about patterns, whether these involve user-
clients, those paying the bill, or members of the design team. An
essential skill for programming is the ability to abstract the criti-
cal aspects of a pattern from a broad-ranging exchange about possibili-
ties.

The following two hypothetical dialogues are examples of how an
exchange might be structured around the necessity to inform designers
about desired patterns. Both are drawn from the example of Chandler
Village (see Chapter 3). The dialogues are invented, but both issues
actually arose in the course of programming. They were handled slop-
pily and could easily have been overlooked in the pressure of time and
complexity. In actuality, the first pattern was incorporated in the
design (but for reasons other than those noted); the second was lost
along the way.

A Dialogue about Housing and Campus Development

The programmer (P) and five students (S), part of a cross-section
of users of the housing who have been hired as consultants, are
meeting to discuss the location of the first student housing com-
plex to be developed on the campus. In a previous session, each
of the students was asked to draw an image of an ideal campus
plan. The programmer has analyzed them carefully and now wishes
to settle upon a specific site for the housing.

P: As you know, we've been asked to consider several sites for
the housing. Two of them are over here, right beside the
existing college buildings and might be linked by indoor
passageways to the classrooms. (The designers preferred
such a pattern) The other three are scattered around the
back of the site away from the existing buildings. Now, I
thought it was interesting that all of you showed your

housing quite a distance from the existing buildings. Could one of you say what the notion was behind that?

S1: I don't know if others feel the same, but it just seems to me that the worst thing about this place is that it's not a campus, just a lineup of buildings along a street, almost like a chorus line.

S2: I agree. I think a college ought to be a campus, something that's different than a high school where you have one big building.

P: When you say a "campus", what do you think it would take to make it one?

S3: My idea was that there'd be this mall down the center, with buildings facing along it--someplace outside where you could go to meet people, where everybody would pass through from place to place.

P: Some of the colleges we saw on the field trip didn't have such a place--Boston University, for example. Would you say they were less of a "campus" there?

S2: Well, there's a difference. At BU most of the students lived right nearby, either on-campus or around. Here, everybody commutes, so you aren't meeting other kids all the time.

S4: That's another thing. If a small group lives on-campus and their buildings are right over the classrooms or just beside, then the classrooms and lounges will seem like their turf, and commuters will feel like intruders. I think there should be some neutral ground which belongs to both groups.

P: How far away does it need to be to create that neutral turf? Would this be far enough? (He draws an area 100 feet away)

S5: No, you see, it's not just far enough away, there should be some natural areas in the center, not just a paved plaza or something. I'd say at least on the other side of this grove of trees. How do others feel?

S1: Yes, then you could see the housing on the other side of the trees, so you know how far the campus goes. Right now, it's all just backyard for the buildings.

P: But suppose all the housing gets developed over there, and all the academic buildings here, wouldn't that just rein- force the split between residents and commuters?

S3: That's why I showed some future academic buildings going on the other side. We need some mixing on both sides. Even- tually maybe we should build some housing on this side, too. But now the most important thing is to create the feeling of a campus. In the center we should be putting places like the student center that they've been talking about, places where both commuters and residents can mingle.

P: Let's summarize what you're saying, then, on these forms where we note patterns. What would you say is the context-- in other words, where does this apply?

S4: I'm not sure what you mean--but I guess it would be housing on a college campus.

P: Any college campus?

S2: No. As I said, I think it applies where you have a campus of mostly commuters and only a few residents. And I think we're actually talking about campus development, not just housing. See, I'd feel the same if it were another aca- demic building.

S5: That's right, and especially to state colleges. I have this friend over at Bridgewater--it's the same story. They somehow think that because we only pay $300 a year we don't deserve a campus. Who's going to see this pro- gram anyway?

P: Well, the Building Authority, for one, and they're building over at Bridgewater, too. Maybe they'll take the sugges- tion. Now what would you say the essential parts of the pattern are?

S1: One is that the buildings form an edge to an open space.

P: Any open space?

S1: No, it's got to be large enough, like we said. Maybe, it just occurred to me, it should be large enough to take all the students and some visitors once a year, at commencement. Or at a rock concert.

P: Standing up? (Laughter)

S1: No, sort of like the Worcester Common on the Fourth of July.

P: We'll have to make some estimates. But what about dimensions? Should it be square?

S5: I think that depends. It shouldn't be too narrow, like at least double that 100 feet you showed. But if there are hills or things that'll make a difference. Here I think those trees should be in it. Just say that it should try to include some of the best natural areas on the site.

S3: And don't forget, the buildings around it should be a mixture, not just housing.

P: Now, how would you summarize the problems this pattern is aimed at solving?

S4: The main one was making it seem more like a "place" or a "campus". What I mean is making it seem like it has a center. And I think it's got to be outside space, not just some corridors or lounges.

S2: And that's a problem when the campus is in the suburbs and everybody commutes. I guess I might feel differently if I were living in Boston going to BU--there you've got the whole city to meet people in.

S3: And it's a problem at state colleges where you're trying to make a normal school that's just a glorified high school into a "college".

P: I think we've got what I need; I'll draft the pattern and show it to you next week.

Dialogue about Kitchens in Communal Living Units

A number of patterns have been drafted during the course of field visits to student housing situations at other college campuses. One dealt with the form of kitchen-eating areas in large units, encapsulating an arrangement which seemed to work best. The programmer (P) is discussing the pattern with a mixed group, consisting of three students (S), the Dean of Students (D), an official from the Building Authority (BA), and a college faculty member (F). The draft pattern is as follows:

CONTEXT: Large communal living units, housing more than eight students, rented to groups rather than individuals.

PATTERN: Areas for food preparation and eating are a single large space with a large counter and range located on an island in the center. The space is the principal gathering place in the living unit.

access

sink

4' min.

ref.

range

access

kitchen large enough for half the students to work at counters

table large enough to accomodate all residents
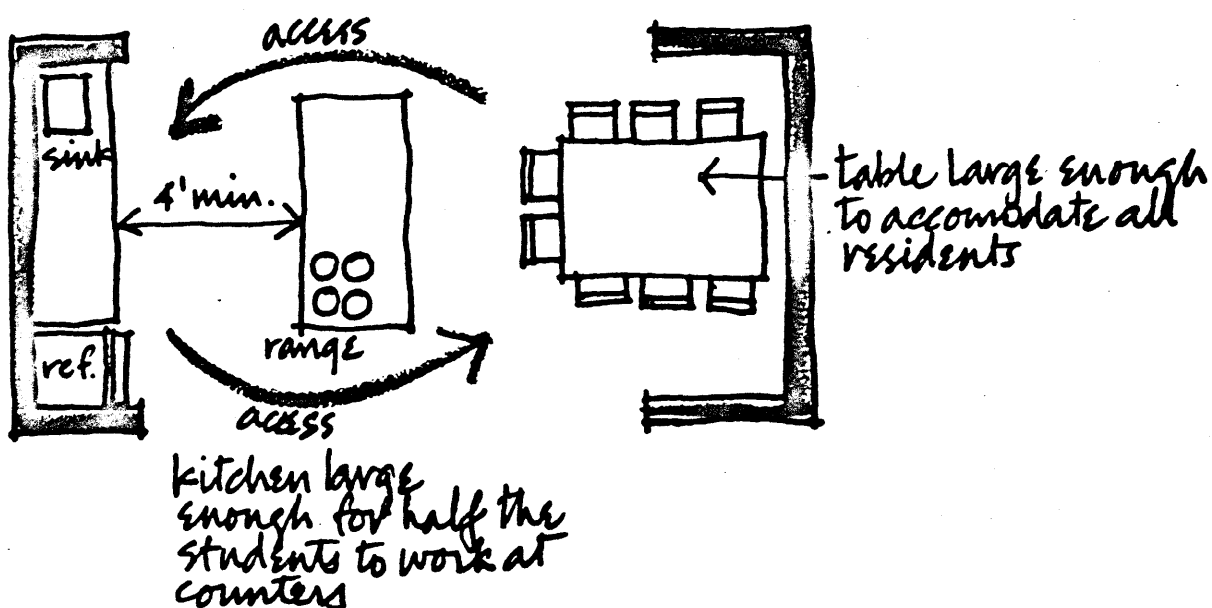
PROBLEM: Food preparation and eating are the most significant collective activities among large groups of students living together. It may be the only time when all assemble. Throughout the day and evening it will be the scene of casual encounters. Frequently, a conversation begun over dinner will continue for some time at the table, regardless of whether more comfortable seating may be found nearby. Cooking and eating provide easy entrees for visitors to the group. The table serves the double purpose of a place for group work and entertainment. The pivotal point is the location of

the range. The chef of the hour is the master of the ship, all activity revolves around him (or her). Given a small overall unit area, a large cooking/eating area is more appropriate than a large lounging area.

The programmer is seeking to determine whether the pattern is appropriate to Chandler Village.

P: We agreed last week that the housing should include a number of quite large units with, say, 10 to 14 people each, as well as the three or four types of smaller ones. This pattern is based on some of the things we observed in large units at other colleges. We found some places that seemed to work well, and these seemed to be where the kitchens were ample in size and connected with the eating area. In places where they were cramped and where the dining area was separated, there seemed to be a lot of running back and forth, with people eating at counters rather than tables, and generally many conflicts over getting everybody involved but not having enough space to do so. And lounges were seldom used by everyone in the house, while kitchens were. So, we're not saying "do away with lounges", but we are suggesting that the kitchen/dining area be given the highest priority in terms of space. How do you feel about this pattern?

DS: I think it's awful! I had hoped there'd be a place for gracious living in this place, and I sure don't see an area strewn with dirty dishes as that. Maybe that's what students did elsewhere, but I think we have the responsibility here to set a different tone.

P: What would a "place for gracious living" be like?

DS: Well, not like that! When kids are in their homes they don't bring guests in and park them in front of a stack of dirty dishes. They have a living room with a dining area off it--the kitchen is screened. When you dine, you "dine".

S1: And that's what we're moving on campus to get away from. I'm not sure I'd live in one of these large units, but I'm not embarrassed by coaxing people into the kitchen.

S2: It's a whole lot better than having half the crew parked in the living room while others are slaving, with the lame excuse that they can't all fit in the kitchen.

F: How would it work—how did it work elsewhere? Wasn't there some assignment of tasks—three or four cooking this week, others next week, etc.?

P: Yes, there were those arrangements, but usually only for supper. And everyone didn't make every meal on time so there was always a lot of cooking going on when dishes were being washed. Or at noontime the place was like a revolving door. You'll notice that we say only half the group needs to be accommodated in the kitchen.

S3:   Dean, I think you have the wrong image. If you want gracious living—and I think I'd like something that is less chaotic than this—you wouldn't be wanting to live in a large unit. Maybe four or six is the maximum where you can pressure people to toe the mark and keep the place ship-shape. You're certainly not going to get a dozen jocks to lay out fine china each night.

S2:   I object to that. I'd probably live in one of those units, and I don't see them as chaos or squalor. I just think of them as a more open way of life—you admit that to eat you've got to prepare the food, and that's not a nasty little thing to be hidden from view.

BA: I have another concern. The way you show the pattern, the room's apparently open on two sides—I don't know whether that's just schematics. But it creates a problem with smells and smoke from the range—incidentally, we'd need a hood over it and that'll cost more. Besides, if we carpet the living room and bedrooms like we've discussed, we won't want people tracking through the kitchen and the dirt onto the carpet. But maybe that's too detailed for the program?

P: No, I think we should get down to specifics. First, do we have agreement that a pattern such as this should be included for the large units?

D: Well, I still am not sold, but I guess if the students feel it's right... However, when we move on to the smaller units—particularly the four-person ones—the pattern should be quite different. There, I think you shouldn't be able to see from kitchen to dining room, perhaps the dining and living areas should be combined.

P: So we'll leave the "context" as it is—just the large communal units. How about the living-learning groups which are also large—does it apply?

F: No. If I were living in one and running it, I'd like the eating area as a separate space. That way it could serve as a seminar table. It should be in the living area so that guests or non-residents could pull up more chairs.

P: Fine. Now the pattern. We have a suggestion that the area not be on a through route and be more closed off from other spaces. Agree?

Several: Yes.

P: Any other suggestions?

S2: I think if it's going to be the main meeting space, there ought to be a large bulletin board somewhere in it—to leave messages, notes, etc.?

P: Where?

S2: Maybe here, near the entrance, if it's more closed off.

S1: I think you should say that the eating space should be large enough to pull the table out and eat on all sides, and still circulate around. Size the room to the table. Even though it's a sketch, right now it seems like there'd be a real bottleneck if the table were pulled out.

P: Finally, have we stated the problem right?

D: I think you should be more specific—back it up with examples from what you saw. In the next college, I'd want people to be able to judge whether or not it applies. Also, say how you got your assumptions about half the crowd in the kitchen. I'll be curious to see whether it really works in this housing.

IV

The two dialogues indicate how the recording of observations, the metaphors of what is desired, and analogies can be combined in composing

patterns that aid in designing. In the first case, a pattern was composed from first-hand experience and speculation. It is truly a conjecture, and its limits might be tested on this campus and elsewhere. In the second case, the dialogue was aimed at validating a pattern observed elsewhere, to probe its transferability. One by-product of that probe was increased clarity about where the pattern would not apply. In both cases, the programmer's insistence on recording the pattern in the format he described was a useful device for structuring the dialogues.

It should be emphasized that the two conversations are inventions as they are written. Many of the comments in the first dialogue did actually occur, but what was missing then was a way to record and inject those impressions into the site decision process. Nowhere in the program documents—or in the minds of future development decision-makers—are recorded the broad notions about the form of the campus. In the second case, the pattern was, indeed, observed on a number of campuses, but was lost entirely in the shift from programming to design. Follow-up comments about the housing (see Chapter 3) point to real deficiencies in those areas of large living units. They might have been avoided if the lessons from elsewhere had been recorded for discussion. Finally, the design program might have been a richer source for future projects if many of these molecules had been preserved.

The two dialogues also suggest some of the skills necessary to abstract patterns from unstructured conversation. One is to allow metaphors to surface, even to coax their elaboration, before attempting to focus on details. A second is to force closure on issues, to be precise

about what is and is not important. And, perhaps equally important, is openness on the part of the programmer—valuing the comments of those he is consulting, being willing to change patterns as better suggestions emerge. If all of these seem like common sense, everyday practice in the field does not prove that.

FOOTNOTES: CHAPTER 5

1. Christopher Alexander, <u>Notes on the Synthesis of Form</u>, Cambridge: Harvard Press, 1963.

2. Christopher Alexander and Barry Poyner, "The Atoms of Environmental Structure," in Gary T. Moore (ed.), <u>Emerging Methods in Environmental Design and Planning</u>, Cambridge: MIT Press, 1970, pp. 308-321.

3. Christopher Alexander, et.al., <u>Houses Generated by Pattern</u>, Berkeley: Center for Environmental Structure, 1969, pp. 53-54.

4. Christopher Alexander, Sara Ishikawa and Murray Silverstein, <u>A Pattern Language Which Generates Multi-Service Centers</u>, Berkeley: Center for Environmental Structure, 1968, p. 15.

5. Fred L. Osmon, <u>Patterns for Designing Children's Centers</u>, New York: Educational Facilities Laboratory, 1971, p. 7.

6. Two forthcoming books, <u>The Timeless Way of Building</u> and <u>The Pattern Language--First Edition</u>, describe respectively the underlying theory and the patterns so far developed for urban development.

7. Alexander, Ishikawa and Silverstein, op.cit., pp. 75-78.

8. Alexander, et.al., <u>op.cit.</u>, pp. 187-188.

9. One powerful set of examples may be found in Alison Smithson, <u>Team 10 Primer</u>, Cambridge: MIT Press, 1968.

10. Le Corbusier, <u>Ville Radiuse</u>, New York: Braziller.

11. Amos Rapoport, <u>House Form and Culture</u>, Englewood Cliffs, NJ: Prentice-Hall, 1969.

12. Institute for Architecture and Urban Studies and the New York State Urban Development Corporation, <u>Another Chance for Housing: Low Rise Alternatives</u>, New York: The Museum of Modern Art, 1973.

13. Lewellyn-Davies and Associates, <u>The Plan for Milton Keynes</u>, Vol. 1.

14. Lewellyn-Davies and Associates, <u>Shanedoah New Town</u>.

15. Several examples: HGSD Housing Studies' <u>User Needs in Housing</u>; Richard Saul Wurman's <u>Houses in Comparative Manner</u>, the Princeton <u>Planning and Design Workbook</u>.

16. Lance J. Brown and Dorothy Whiteman, <u>Planning and Design Workbook for Community Participation: An Evaluation Report</u>, Princeton: Princeton University School of Architecture and Urban Planning, 1973.

17. The LR/HD prototype fails on this score. Witness statements like: "To minimize unseen non-active places and promote easy recognition of neighbors, through limited access and the provision of spontaneous surveillance over entry to the cluster," IAUS and UDC, <u>op.cit.</u>, p. 16.

18. Alexander and Poyner, <u>op.cit.</u>, p. 309.

19. <u>Ibid.</u>, p. 314.

20. Donald Schon, Talk at the Aspen International Design Conference, June, 1974.

21. Louis Kahn in Richard Saul Wurman and Eugene Feldman, <u>The Notebooks and Drawings of Louis Kahn</u>, Cambridge: MIT Press, 1973, p. 25.

22. <u>Ibid.</u>, p. 74.

23. Alexander, et.al., <u>op.cit.</u>

CHAPTER 6: PERFORMANCE REQUIREMENTS

If environmental patterns represent fragments of solutions which ought to be incorporated in a design, performance requirements are specifications for which solutions need to be found. They include a broad range of normative ("should be") statements, threaded throughout the typical environmental program.

Sometimes performance requirements are so general that the designer is offered little guidance; almost no solution is excluded:

> "The plan should provide a pleasant circulation system, an uncrowded arrangement of buildings, creating its own identity, while merging into its natural environment." 1

At the very opposite extreme, the performance requirement may be very specific, allowing only a few possible design solutions, or focussing on a single environmental sub-system. It may be only remotely related to the behavior of the occupants of the environment. For example:

> "Subsystem: Finished Ceiling
> Attribute: Illumination
> Requirement: (1) Control Reflectance
> Criteria: (a) The exposed surfaces of this subsystem shall have
>   an average reflectance of no less than 75%.
> Test: Subsystem/Physical?measurement of Reflectance/ASTM E97/
>   Modification: determine reflectance for each surface and
>   compute average by using relative areas as weighting factors" 2

While well-intentioned, both of these types of statements would be more effective if they stated explicitly why the end-result was desired, and if they were more complete in notint the requirement. Missing, in the first case, is any sense of how terms such as "pleasant", "uncrowded", "its own identity", or "merging" could be measured, either in reviewing

the plan or evaluating the eventual environment.   In the second case,
there are no clues about how the requirement was derived, why the level
of 75% was set, or on what human activities reflectance seems to have a
bearing. While a partial statement of performance is often better than
no mention at all, the ideal would be to have a common format for require-
ments which forced its author to think precisely about intentions. This
chapter will explore a possible approach to that objective.

I

The term "performance," as coupled with "specifications" or "zoning"
or "criteria", has become a popular reaction to end-state or prescriptive
requirements. As Michael Brill has observed, about building requirements:

> "Performance specifications state in precise terms the char-
> acteristics desired by users of a product's or system's performance
> without regard to specific means to be employed in achieving the
> results. Such specifications have recently come into use as mech-
> anisms for procuring building systems and evaluating their perfor-
> mance. Performance specifications do not describe dimensions,
> materials, finishes, methods of manufacture...In normal use, tradi-
> tional, or "prescriptive" specifications are a way of assuring that
> what is procured will be identical to some "model" which has given
> satisfactory performance in the past...For example, in specifying
> a 10" brick cavity wall with running bond, we will accept only a
> 10" brick cavity wall with a running bond. Yet we have selected
> that specification, whether we know it or not, on a performance
> basis...Prescriptive specifications are only a convenience. They
> are also a constraint to innovation, in that only a very narrow
> range of solutions to any one problem is acceptable at a given
> time, even though many solutions are available which would give
> equal (or better) performance."   3

The most common strategy in writing performance requirements for buil-
dings is to subdivide the task into each of the principal component sys-
tems, then to formulate detailed specifications for each. For example,

the Public Building System Specifications[4] treat separately the structure, heating-ventilating-air conditioning systems, electrical distribution systems, luminaires, finished floors, finishing ceilings and space dividers. Any specialized (non-office) spaces are specifically excluded, as are the design of the building skin, its site planning, the relationships between spaces and other key programmatic elements. Indeed, very little is said about how the building is expected to serve its occupants and visitors. The specifications have been reduced to the most basic level of human physiological supports, with the apology that "these attributes, as the human office worker perceives them, directly affect his output...(P)reliminary research by others suggests that significant increases in productivity may be linked more strongly to personal satisfaction than to technical process factors and 'efficient' layout."[5] The overwhelming thrust of efforts to write performance specifications for buildings has concentrated on a limited set of issues, especially durability, maintenance, health and safety, and basic needs of light, air and acoustical satisfaction.

Performance specifications have been applied most widely to the construction of educational facilities. At least a dozen school systems have experimented with their use for classrooms; some have gone beyond a simple concern with constructional issues and begun to account for the fit between activities and their settings. For example, the California SCSD program defined a range of group sizes that should be accommodated for specific teaching activities and specified in precise terms four types of flexibility which should be possible: spatial variety, imme-

diate change, long-range changeability, and expansion.[6] The University

of California University Residential Building Systems (URBS) project de-

voted considerable attention to understanding ways in which students

seek to personalize their living space. This knowledge was translated

into performance requirements for walls and other subsystems, and even-

tually helped in selecting designs which accomplished these require-

ments.[7]

But these examples are the exception; most performance specifica-

tions provide only loose linkages between user activities and environ-

mental performance, and concentrate on minimally workable conditions.

To be sure, fire safety requirements are related to human behavior in

extreme conditions, but more normal conditions are often glossed over

or left to the designer. Even supposedly "hard" fire safety require-

ments are usually based on a set of untested hunches, and those writing

codes or specifications seldom are forced to be explicit about what they

are based upon. A useful model of how this might be done is the process

of certification of commercial aircraft for safety requirements. The

Boeing 747 was required to be evacuated in less than 3 minutes from the

signal of an emergency, a figure based on records of emergency condi-

tions. Actual field tests simulating emergencies were made to judge

the aircraft's compliance. While it's seldom possible to mock-up an

environment completely before construction, we might expect that perfor-

mance requirements for an issue such as fire safety—which has a pro-

found effect on building design—would be treated equally. Plenty of

situations could be tested in existing buildings.

The picture painted by attempts to develop performance approaches
to zoning is similar. Reacting to the dreary uniformity produced by pre-
scriptive requirements (mandatory lot sizes, setbacks and sideyards,
use districting, etc.) and the insensitivity of these requirements to
local conditions (unique vistas, vegetation, slopes and the like), a
number of communities have experimented with or adopted performance
zoning codes. As in the case of buildings, these specifications trans-
cribe the implied levels of performance prescriptive requirements into
more flexible terms. An interesting example is the town of Gay Head,
Massachusetts, which reduced its zoning requirements to a series of
eight rules accounting for traffic generation, parking, soil, water and
air conditions and some issues of appearance.[8]

Performance zoning codes, too, have generally concentrated on the
most easily measurable environmental attributes--traffic generated,
noise, air and water quality. But the suburban sideyard, one icon of
prescriptive zoning, is seldom dealt with in terms of performance, de-
spite the fact that for many suburbanites, it has important meaning.
There lies the difficulty: translation from prescriptions to performance
forces a fundamental re-thinking of what is desirable. The process is
sometimes painful (it may demonstrate that the emperor has no clothes)
and it may raise important issues of values and trade-offs. Moreover,
it inevitably begs the question of what can be measured and how to do so.
But part of the importance of performance specification is that those
issues cannot be sidestepped. The point here is to suggest a workable
format for such an inquiry.

II

Any complete statement of performance really has several components, whether stated explicitly or included implicitly:

1. An indication of the <u>context</u> in which the specification should apply.

2. A description of the desirable <u>behavior, activities or qualities</u> to be supported or sought.

3. A specification of the <u>level</u> of performance desired.

4. An indication of the <u>measure</u> to be employed in determining whether or not this is achieved.

5. An outline of the <u>test</u> procedure for making measurements.

6. A statement of how to <u>validate</u> the requirement.

These components seem to be important regardless of subject. If the programmer is unable to devise a measure of performance, or is unable to put his finger on the range of activities to be supported by the requirement, questions must be raised about the clarity of his intentions. What is to be served by stating requirements that can't be tested or validated? Two examples below illustrate how requirements might be phrased in performance terms, using this format. The first is drawn from the programming and design of Chandler Village (see Chapter 3). It deals with the location and design of an important social gathering place, the post office for the housing area. The second is an attempt to state in precise terms the desire of Cambridgeport residents, voiced during the Ecologue process (see Chapter 9), that any new development of the neighborhood should not increase traffic on neighborhood streets.

Example 1 - Chandler Village

PERFORMANCE REQUIREMENT: The Post Office and its immediate environs
    should provide a social gathering point for the entire housing
    area.

CONTEXT: Overall plan for a student housing complex.

BEHAVIOR SUPPORTED: Random encounters among students living elsewhere
    in the housing area; casual "hanging around" before or after
    checking for mail; spontaneous follow-on activities such as stop-
    ping for coffee with a friend; starting or ending point for a
    walk to academic buildings; stopping to read mail or reply to
    short-response mail; an excuse for visiting someone seen entering
    the place.

LEVEL OF SUPPORT (A): Accommodation of 10% housing area population at
    any particular time within area and environs, at least half in-
    doors.

    Measure: Area provided in square feet.

    Test: Compute adequacy using following space standards:

        Standing   6 sq.ft./person
        Seated in conversation   10 sq.ft./person
        Seated at table   8 sq.ft./person

LEVEL (B): Post Office entrance visible from at least 60% of housing
    units.

    Measure: View of entrance from windows of living units.

    Test: Plot sightlines from windows in either bedrooms, living
           rooms, or entrances of units to Post Office entrance.

LEVEL (C): Post Office should be along the route from housing unit to
    academic buildings for 60% of students.

    Measure: Walking routes along main pedestrian paths, with less
             than 30' detours.

    Test: Trace walking paths between entrances and paths to aca-
           demic area.

LEVEL (D): At least two alternate purposeful activities should be
    within 50 feet of and visible from the entrance to the Post
    Office.

Measure: Distance and sight lines.

Test: Identify locations of and test distances and sight-
lines to coffee area, vending machines, laundry
waiting area, pay telephones, television lounge,
scheduled activity spaces, basketball courts, public
lounges.

VALIDATION: Field testing of a college student housing complex
which meets above requirements should demonstrate that at
least one of the above activities is one students engage
in during a typical week.

Example 2 - Cambridgeport

PERFORMANCE REQUIREMENT: The amount of traffic generated by de-
velopment on an existing residential street should not ex-
ceed the norm for the existing neighborhood.

CONTEXT: Existing 3-family housing neighborhood streets with
average lots of 40' with roadways not exceeding 40', with
predominantly local traffic, and within 1/3 mile of public
transit.

SUPPORT: Pedestrians should be able to cross streets with little
conflict with passing motorists.

LEVEL: Probability should be less than .05 that a pedestrian
wishing to jaywalk will need to stop to avoid an oncoming
auto during peak traffic hours.

MEASURE: Average number of auto trips generated by persons living
or uses located along the street.

TEST: Predicted auto trips generated during weekdays should not
exceed 2 per 10 feet of frontage. Average auto trip genera-
tion rates have been observed as follows:

Predominant occupancy	Auto trips per day
Family groups (1-2 br)	2
Family groups (3-4 br)	3
Non-family groups (1-2 br)	3
Non-family groups (3-4 br)	4
Elderly (1-2 br)	1.5

VALIDATION: Field observation of auto traffic on residential
streets and residents' attitudes about danger of crossing.
In setting the level, the following assumptions were made:

Avg. peak volume = 15% of 24-hour volume
Avg. pedestrian volume crossing street in peak period =
60 per hour
Pedestrian safe crossing interval = 15 seconds
Avg. automobile speed = 15 mph
Locally-generated traffic = 50% of total volume

Computation was made for average 500' blocks in worst con-
dition, i.e., where all traffic flows 1-way, where all
pedestrians cross near highest volume intersection.

Why spend the time and energy required to convert feelings about per-

formance into such an elaborate format? There are at least three reasons

which may make it worthwhile. First, and perhaps most importantly, it

aids in thinking precisely about what is being asked for. In the first

example, the feeling that the post office ought to be the social center

takes on meaning when the programmer, and those he is working with, are

forced to define through what routine activities and sociability might be

promoted. Going one step further, they are encouraged to think about the

physical qualities of solutions which one might look for in judging whe-

ther a design meets the intended objectives. Similarly, in the example

of traffic on Cambridgeport streets, the discussion might have been chan-

nelled in the direction of defining what people meant by freedom from

traffic conflicts. Were some streets in the neighborhood now too heavily

travelled, while others were acceptable? How many cars and pedestrians

used these streets? Without pressing these issues, the discussion can

(and did) too easily shift to inappropriate means of ensuring what is

desired--like a blanket prohibition of anything other than 3-family

houses. Thus, a structured inquiry about performance can be an important transactional tool, aimed at sorting out the appropriate linkages between ends and means.

For the same reasons that pattern language is a useful umbrella for accumulating experience, the performance format will aid in transferring information and insights from one problem to another. To a degree, this has already occurred in the sequence of performance documents prepared by school systems—each is at least partially indebted to its predecessors. Similarly, the GSA specifications for office buildings are now in their second edition, with substantial additions and changes based upon the experience of using them. But project-to-project transferability, and re-use for different types of projects, is seriously hampered by the lack of detail usually included—most notably, not specifying either the basis for requirements or the context where they apply. First attempts to prepare performance requirements, admittedly, will be crude (as are those above) but it is worth the attempt as groundwork for other projects.

Finally, the performance format suggested above will aid immeasurably in evaluating environments—both prior to and after their construction. The requirements may prove inadequate, but it is almost impossible to evluate environmental performance without a complete statement of intentions.

III

Each of the six elements of a performance requirement raises important theoretical issues. The programmer is faced with choices about what to include and what to neglect, how to phrase intentions, how to estimate reliability, how to predict the effects of a requirement. The following notes are a start on such theories.

CONTEXT. The statement of context should provide an indication of where the requirement applies and, by implication, where it does not. Generally, a performance requirement will be aimed at either:

1. The environment as-a-whole--the complete building, the overall open space design, the street, the aggregate of attitudes or experience, etc.

2. An individual physical subsystem--the luminous environment, the outdoor open space adjacent to a house, the building partitions, a roadway, etc.

3. An individual activity subsystem--the activity of conducting a class in a school, dining in a college student's apartment, the approach to a shopping center, etc.

In structuring a program document, a useful technique is to group performance statements in these three categories, for each will generally inform a different stage of the design process. Often the whole-environment requirements demand attention first; the physical and activity subsystems will come into play when the rough outlines of a design emerge. Being specific about the context will aid in the transferability of requirements from project to project. A programmer may leaf through a file of accumulated statements, collecting those which seem to pertain to the problem at hand, much as the architectural specification writer assembles his document from past sources. Where repetitive conditions are encoun-

tered, a single requirement may apply quite broadly in the design. For example, in a program for a student housing area, a half-dozen or so performance requirements may apply to every student bedroom. These need not be repeated if a typology of conditions or spaces is drawn. As a second example, the New York City Housing Quality Program[9] divides its requirements into four groups, dealing with "neighborhood impact," "recreation spaces," "security and safety," and "apartments." Each project will have its own logic about the best way to group requirements.

BEHAVIOR SUPPORTED. The environment may be thought of as a support system which aids (or conversely, frustrates) people in acting out their motivations. Not all behavior is predictable, but, for that which is, Constance Perin has coined the term, appropriately, "behavior circuits." She distinguishes between several types, which may aid the programmer in attempting to specify what the environment is expected to support:

> "Behavior circuits are <u>routines</u> when they recur so often as to have a regularized sequence that the person carries out relatively unconsciously and more or less independently of others (personal grooming; walking the dog). Behavior circuits are <u>collaborations</u> when actions composing them recur frequently but, unlike routines, go beyond the compass of the self to require other persons or equipment for carrying them out (vacuuming the house; playing baseball). Behavior circuits are <u>events</u> when the maintenance of various kinds of group relations occur at any level of frequency (parties, meetings, religious services). (A residual category is <u>emergencies</u>—for the lack of a better word—which influence the shape of the environment, as in putting out fires, where the turning radius of a cul-de-sac has to accommodate a fire engine, or in preventing fires, where the safety requirements influence the form of the structure.) 10 (Her emphasis)

The environment may be called upon to support predictable behavior through both its <u>use</u> and <u>meaning</u>. Use is often most easily specified, by

a listing of the types of behavior circuits which should be possible in a setting. Meaning is more difficult to operationalize. In part, it may consist of certain qualitative dimensions of experience--a "casual" encounter, a "reverential" ceremony, the "sycopation" of motion, and the like--tied to the sensuous characteristics of an environment. But it may also relate to symbolic qualities of particular artifacts or arrangements of the setting, such as like being near the "hearth," being in an "attic," or the sense of living in a "colonial house."[11] Sometimes it is best to phrase these requirements in terms of environmental patterns--we can do no better than adapt precedents that work. If we can understand the generality of how the environment should be supportive, and can imagine that several possible solutions could exist, then it is worth the attempt to specify a performance requirement.

What of places in which the behavior is not predictable? Clearly, curiosity is a human drive and exploration is something we all do. But any environment sets limits to behavior and it is worth being clear about what can be done in a place and what cannot. Too frequently a multi-purpose place designed for almost everything, is a no-purpose place. Little may be prevented from happening there, but it may also provide little support for anything in particular. Where the need is for adaptation, something should be said about the range of uses to be housed.

LEVEL OF SUPPORT. The level of support an environment provides for activities, the measure by which this is to be judged, and the test procedure for making such a measure are closely linked. Together, they describe the norm one hopes to achieve in a setting. But it is worth sepa-

rating them because the programmer must make choices about each. Of the three, the level of environmental satisfaction is the least clearly understood.

Requirements for managing automobile traffic are generally considered the firmest standards for design. (They often take precedence over others because of this firmness.) Yet as the Cambridgeport example above evidences, these are actually built upon a set of norms about the performance expected by motorists and pedestrians in a street. If the chances of conflict between pedestrians crossing and motorists travelling along a street are to be low, the logical question is: how low? Is a chance of occurrence of 1 in 20 too high, or are we willing to accept more frequent conflicts? In a similar vein, traffic lane capacities, lane widths, turning radii, horizontal and vertical curvatures are all built upon an elaborate set of assumptions about the level of performance desired. Given enough persistence, a driver could turn around in a space not much longer than his car, but that is hardly the norm we would seek in a public cul-de-sac. But in any case, high or low levels may make sense and partly that will depend upon the consequences of the standard. For example, in a residential subdivision, high performance levels for motorists' roadways may lead to destruction of the natural landscape. That result may be more serious than a slightly lower level of roadway performance. By specifying the level of performance, it may be possible to reexamine it when tradeoffs become evident.

Often we can make judgements about levels of performance by identifying and observing environments which seem, by general agreement, to

serve their occupants well. Performance levels will almost always be probablistic in at least two ways. Since we are dealing with predictions about human behavior, exceptions will always be found. (It is worth remembering that even physical materials are not completely predictable. A steel beam does not sheer at precisely the same stress each test; nor does a flammable material always ignite at the same temperature. Safety factors account for this variation.) Even the most routinized human behavior (such as driving) is practiced in several forms (two distinct forms, according to sexists) and we will be forced to average populations to assign a norm. Human desires and expectations are, thankfully, also not uniform, introducing a second dimension of variance. Thus, performance levels should always be qualified by noting the proportion of cases where the standard should apply.

Norms, where a fixed level of performance is the target, are only one of many ways of specifying performance. Others may be more useful in any particular case: relative levels ("greater than existing," "less than existing"); within a range ("between x and y"); maxima or minima ("less than x," "more than y"); or in terms of extremes ("deviation of x").

MEASURES. Part of the reason that safety and health requirements dominate most debates about performance is that the conventions for their measurement are the most broadly accepted. Usually these involve familiar measurement systems found, over time, to be good indices. As an example, the requirement that septic tanks be located at least a certain number of feet from a ground water source is in effect a shorthand measure for a more elaborate calculation involving discharge rates, soil percolation

characteristics and a host of other factors. Through repeated testing,

the probable level of pollution by sewerage was found to be within accep-

table limits when the source was at least that distance away. The advan-

tage to the shorthand measure is its ease in use.

An ideal measurement system is always one which predicts a great

deal, while avoiding elaborate instrumentation. Simple instruments are

often available for measuring the physical characteristics of environ-

ments. But we may not know enough about what dimensions are important,

or the characteristics may be so complex and intertwined, that physical

measurement is unreliable or cumbersome. In such cases, humans may be

the best instrument. An innovative example of this approach is the walk-

away test, designed to judge the acceptability of ambient noise levels

on housing sites. HUD guidelines describe the measurement system as

follows:

> "The Walk-Away Test requires two men who exchange roles as
> speaker and listener; thus, each person should have normal hear-
> ing and an average voice. To perform the test, you will need a
> 100-foot tape measure and some reading material with which both
> persons are unfamiliar.

> "The speaker should stand at a fixed location, while the
> listener, starting at a distance of 2 or 3 feet backs slowly
> away. The speaker should hold the reading material at chest
> height in such a way as not to block the direct path from him-
> self to the listener. He should not raise his voice in an at-
> tempt to maintain communication.

> "At some point the listener will find that he can under-
> stand only a scattered word or two over a period of 10 seconds
> or more. At this point, measure the distance between the lis-
> tener and the speaker."   12

Measured distances are converted to a four point scale, by means of a table: clearly acceptable (70 ft.), normally acceptable (26-70 ft.), normally unacceptable (7-25 ft.), clearly unacceptable (7 ft.). The elegance of the test is its simplicity; all that is required is a tape measure, two men with average voices, a book and a straightforward table. There are also dangers to the use of humans as instruments, of course—skeptics suggest that if a site doesn't meet the walk-away test, you simply look for two men who speak more loudly.

One fruitful strategy for developing simple but highly predictive measures is to begin with a broad set of perceptual measures and regression analysis, which can be used to weight different physical indices of a place based on people's aggregate impressions. Semantic differential[13] scales (paired opposite adjectives with a scale between them) can be used to dimension attitudes. A recent study of the use of city streets at night[14] employed this technique, finding that the pedestrian's sense of security on residential streets could be predicted in over 90% of the cases by three measures: the vertical illumination level, the uniformity of lighting, and the relative wealthiness of individuals living along the street. While a variety of other factors clearly play some role in affecting attidues, if standards for designing or changing streets are to be developed, these three measures and their relationships would be the best predictors of performance.

TEST. It is important to distinguish between a measure and a test: a measure is what to observe or compute; a test is how to do so. Sometimes part of the test seems self-evident, as when the measure is in feet

or degrees, or numbers. But even in such instances, questions are often

raised about when and how to measure, how to convert measured results into

a useful index, how to ensure reliable results. In the case of the walk-

away test, the guide notes:

> "Since noise may vary during a 24-hour period, this test
> should be performed at those hours when noise is apt to be
> most severe--i.e., during the peak morning and afternoon traf-
> fic periods--and at those hours when noise is apt to be most
> annoying--i.e., between 10:00 pm and midnight when people are
> trying to go to sleep."

A work sheet provides a procedure for averaging each of the separate site

readings.

Well-established procedures for materials testing have been developed

by a variety of standards-setting organizations, notably the American

National Standards Institute (ANSI), and the American Society for Testing

and Materials (ASTM). Where widely accepted procedures have been developed

there is value in employing these. But tests designed for the controlled

conditions of the laboratory often tend to be costly to perform and overly

precise; simplified field testing methods may sometimes be desirable. The

GSA devised the following test for stain removal of exposed finish mater-

ials:

> "Apply staining agent to specimen surface on or within
> 3 inches of joint if applicable. Stain size should be at least
> 1 inch in one dimension. Let stand for 24 hours.
>   Remove stains by vigorous rubbing of water-wetted rag for
> 30 seconds, then wipe clean with two passes of rag, wetted with
> clean water." 15

Where a "common sense" test such as this is possible, nothing is gained

by greater precision. Sometimes human beings can perceive environmental

phenomena more accurately than elaborate instruments. Low velocity
breezes (less than 3 mph) which may be important to the cooling of a
public space are most easily and accurately judged by a sensitive ob-
servor. A child's bubble solution will immediately reveal air patterns.

For human needs other than those most closely tied to health and
safety, there are few accepted testing procedures. Environments are
costly to construct and, unlike an aircraft, will likely not be dupli-
cated many times, ruling out testing full-blown prototypes. Tests can
be invented to overcome this:

1. Looking for "comparables". The use of a similar space can often
reveal what aspects of performance will be critical. A church group
might actually try holding services in other places like the designs they
are considering. If the capacity of a small park is critical, residents
of a neighborhood might assemble and use a place of equal size to see
whether it is overcrowded.

2. Mock-ups. Where performance is critical and there are no nearby
comparables, a mock-up of part of an environment may be justified. When
the traditional design of a courtroom was being modified in the design
of the Chicago Civic Center, rooms were mocked-up in a nearby warehouse,
and actually used for several trials.

3. Simulations. Less-than-full-scale models are a conventional
testing device, but their potentials have hardly been tapped. Montages
with new buildings added to photographs of what exists, acting out beha-
vior with dolls in a model of a space, games which attempt to chart the
process of interaction over time are possible approaches.

4. Pilot projects. For environments created over a long period of time, or in increments, pilot projects can be used to test performance.

5. Extreme conditions. Imagining the worst and best possible conditions is sometimes a useful testing procedure.

6. Panels. Where there is little agreement on performance measures, a panel might be the best way to judge adequacy. The difficulties are well-known, but making a record of what people said was the basis for their judgement can aid in developing rough measures for future cases.

7. Best known solution. Pragmatically, this is a common test. Adequacy is when no one can think of a better solution.

Testing is clearly an uncharted area of performance specification and an area much in need of innovation.

VALIDATION. If testing deals with the process of judging whether a design meets some standard of performance, validation asks how the appropriateness of the standard or specification itself may be judged. Information about validation is almost never now included in published performance requirements. To say that a requirement may be validated by "field interviews," or "observation of the completed environment" is to say almost nothing that is helpful. A useful definition goes much further; it describes: a procedure for acquiring data, defines the data to be sought, and the method of comparing data with stated requirements.

IV

Transforming a loose set of needs and desires into the format suggested above is a laborious process; not every project provides the time and budget to cover all issues exhaustively. Nor should it be expected to. Once experience begins to accumulate, examples of well-written requirements can be culled from prior projects where similar issues pertained. Each new project can be expected to raise a set of unique issues that should receive the bulk of attention and routine objectives might be disposed of quickly by adoptions from past experiences.

But a more basic issue is when a performance statement is preferred to a pattern. Certification can allow the two to be combined effectively, allowing patterns to be used without testing if they are known to meet the standards of performance. This practice is common in materials specifications. A particular carpet, once certified as meeting the applicable tests for durability, flammability and the like, may be specified directly. For any other alternate carpet, the proposer must demonstrate that it meets the same performance tests. The certification process can be applied to design solutions. In New Jersey, the Division of Housing and Urban Renewal administers a performance code for all multi-family housing in the State. When a particular building type is certified as meeting the performance requirements (principally fire safety, space, light and air considerations but also dealing with site design issues), it is labelled an acceptable solution and included in their catalogue of building types which do not require thoroughgoing review. This practice could be extended more broadly to programming efforts.

Because performance codes are often judgemental and require lengthy reviews, the staff capabilities to administer the code are crucial. A performance zoning code dealing with matters of appearance will only be effective in the hands of individuals whose judgement is trusted, and who are willing to lay open for inspection the reasons for decisions. While performance specifications offer the promise of more sensitive environmental regulation, they are in many ways more challenging of professional behavior.

In the final analysis, performance requirements are probably most useful:

1. Where the type of environment is unprecedented and there are few comparable environments on which to draw model solutions.

2. Alternatively, for routine design problems where innovation is to be invited, because they make it easier to have unconventional solutions considered.

3. In building programs, for the few spaces which are central to everyone's experience of the place.

4. In participatory programming processes where they can be a useful device for structuring dialogue.

5. In situations where personnel are permanent enough to encourage updating, when experience with the use of performance standards suggests they should be changed.

FOOTNOTES: CHAPTER 6

1. Michigan State Housing Development Authority, Townhouse Development Process, 1970, p. 3.

2. General Services Administration, Performance Specification for Office Buildings, Second Edition, June 1973, p. G-135.

3. Michael Brill, "Evaluating Buildings on a Performance Basis," in Charles Burnette (ed.), Design for Human Behavior, Philadelphia Chapter of the AIA, pp. 41-42.

4. General Services Administration, op.cit.

5. Ibid., p. B-7.

6. Educational Facilities Laboratories, SCSD: The Project and the Schools, pp. 36-37.

7. See William Mayer, et.al., "Paths to Performance--Some Recent Projects Employing the Performance Concept," in Bruce Foster (ed.) Performance Concept in Buildings, NBS Special Publication 361, Vol. 1, 1972, p. 307.

8. Kevin Lynch and Philip Herr, "Performance Zoning," Planners Notebook, Vol. 3, No. 5, October 1973, p. 3.

9. Urban Design Council of the City of New York, Housing Quality--A Program for Zoning Reform.

10. Constance Perin, With Man in Mind, Cambridge: MIT Press, 1970, pp. 98-99.

11. See Gaston Batchelard, The Poetics of Space, Boston: Beacon Press, 1969.

12. Theodore J. Schultz and Nancy M. McMahon, Noise Assessment Guidelines, U.S. Department of Housing and Urban Development, 1971, pp. 16-17.

13. See C.E. Osgood, G.J. Suci and P.H. Tannenbaum, The Measurement of Meaning, Urbana: University of Illinois Press, 1957.

14. Gary Hack, et.al., Improving City Streets for Use at Night, 1974.

15. General Services Administration, op.cit., p. H-14.

CHAPTER 7: DESCRIBING CLIENTSHIP: SCENARIOS OF PEOPLE USING ENVIRONMENTS

Packages, patterns and performance specifications all deal with the qualities of environments in a highly disaggregated form. Each describes some of the dimensions of the environment, but programming should also instill a sense of clientship in the process of design. As he conceives of its form, the designer should be able to constantly "inhabit" the environment on behalf of those who will use it. He needs a form of information which helps him get to know his clients, even though they may be remote or not yet on the scene.

There are, of course, many ways of learning about the uses of environments. Richard Neutra, an architect respected for the sensitive houses he designed, advocated living for a few weeks in his client's current home, and he commonly did so before putting the first line on paper. Most designers spend at least brief periods hanging around and observing those they will be seeking to house. And the involvement of actual users or their surrogates in programming and design can allow users to speak for themselves.

But the issue is more complex than simply having in mind who will use a place. What if many people will share an environment (a new community, for example), each with widely or even subtly different expectations about it? A statistical summary can tell something about who they are and what they prefer, but statistics breathe no life; after a time they are numbing. What if the contemplated environment is a great departure from what people now have; how does one then think about their use of it? And what if designer and programmer are not the same person; must the

designer always retrace the programmer's steps? Finally, there is an issue of knowing what one knows. How can either a programmer or a designer check the accuracy of his projections about the way people might use or experience an environment? It is easy to become convinced of one's inventions, especially since creative design always involves reliance on inner resources as well as what one has seen or is told.

The act of describing a client's use of an environment—how he moves through a place, his thoughts and feelings along the way—can lay open for inspection the mental model which a professional holds of those he is serving. Description, itself, forces clarity: distinctions between different kinds of clients must be made; sensations must be separated from behavior; time must be considered as well as space. Clientship cannot be taken for granted; after describing the prospective use of a place, the professional may need to adjust his evolving images about its form and organization, or he may conclude that he needs to know more about user attitudes and behavior. The exercise will then have served its purpose.

I

One way to describe the relationships between a client and his setting is to construct a scenario of an environment being used. By a scenario[1], I mean simply the unfolding of a hypothetical set of experiences during a definite period of time—storytelling about people, place and time. A diary does this retrospectively, providing a glimpse of important events, thoughts and impressions. Much can be learned by

observing what does or does not get written in diaries and these can become important sources of data. An excellent example of writing in a diary format is Kenneth Lasson's The Workers: Portraits of Nine American Job Holders[2], which follows individuals in different working-class occupations through a daily round. The events along the way spur digressions which revel, in the subjects' words, attitudes about politics, family life, race, or whatever is uppermost in their minds. Reading the book challenges stereotypes and provides a deeper understanding of how motivations are kept alive amidst dull and often abrasive routine. The trick is to write a diary prospectively, to make an informal guess about what a relatively complete day might look like in a place that is only on paper. For this, journalistic techniques, the work of film makers, photographers, artists and choreographers, and the working methods of dramatists and performers and stage, can offer some guidance.

Just as a story can be told in many different ways, there is no single "best" medium for a scenario. But each medium opens possibilities and subtly directs what is communicated. Contrasting film and the written word, Henry Miller (appropriately) writes:

> "I am a film addict and a book addict, too, but they
> are not equal in effect...What I notice about films is
> that certain characters become imbedded in the back of your
> head. You can bring them to life over and over again. With
> a book you never know how a certain character ever looked.
> You have to imagine him ...You get something in books that
> no film can ever give: the associations which words conjure
> up, ideas that beg to be developed, and so on. These things
> can never be expressed in films. The film is too real, too
> concrete." (3)

Since characterization is the point of a scenario, we might expect different results from film and writing: durable images of personalities and events as they are communicated through the moving picture; softer, more evocative tracings of feeling and thought from the written page. Artists know their medium and develop a palette accordingly.

The concreteness of the here-and-now is beautifully captured in Topper Karew's film, This is the Home of Mrs. Levant Graham, a documentary on the way lives intersect in an urban ghetto home. Karew, an architect, made the film as a way of sensitizing designers—often light years distant in background—to the life style and aspirations of the future occupants of inner city housing. But film makers often turn to cliches when they have to imagine a sketchy environment of the future. The medium forces them to say more about the world than they can know; the details chip away at the whole impression. One creative exception is Jean Goddard's Alphaville, an imaginary city composed entirely of fragments of present-day Paris which bore witness to the future.

In music and, particularly, in dance, the "score" is the scenario. In these arts, process assumes as much importance as characterization. Lawrence Halprin, the designer, draws an analogy to the problem of designing places:

> "Scores are symbolizations of processes which extend over
> time. The most familiar kind of 'score' is a musical one, but
> I have extended this meaning to include 'scores' in all fields
> of human endeavor. Even a grocery list or a calendar, for
> example, are scores...I saw scores as a way of describing all
> such processes in all the arts, of making process visible and
> thereby designing with process through scores. I saw scores
> also as a way of communicating these processes over time and

space in places at other moments and as a vehicle to allow
many people to enter into the art of creation together,
<u>allowing</u> for participation, feedback and communications." (4)

Halprin usually begins a project by composing a score for the process of

design. Later, when the desired qualities of a place become clear, he

will compose a different kind of score for the experiences it is to of-

fer. His scores for the breathtaking fountains he designed in Portland,

Oregon--diagrams of sounds and sensations, and the variety of ways they

could be combined--were simply his most important program statement.

While Halprin uses scoring broadly, I have in mind here a particu-

lar kind of characterization that reveals the programmer's understanding

of clientship by charting the likely ways a prospective environment would

be experienced by one specific type of user. Like Karew's film, the sub-

ject should be in some ways representative of a larger set, but if he is

to have life he will need to be invested with a personality, even idio-

syncracies. Writing is one effective medium for composing such a scen-

ario because it invites the mind to wander, allowing some things to be

focused while others are left sketchy, and because it is easily revised

and changed. This kind of scenario is a transactional tool. It should

encourage others to speculate about clientship, contradict or validate

current understandings about use of an environment, and provide a read-

ing on whether decisions being made about environmental form.

Writing a scenario is a way of prompting important questions to

be asked. About the client who is the subject: How shall I break the

world apart into classes of users? What kinds of reactions are person-

dependent, and what others might be shared by a group? Are there any

universal attitudes towards this kind of place? About the environment

and its use: Does using this environmetnt only represent a brief episode

in the day of its occupants--are they simply passing through? Or is it

a homebase, a place someone hopes to personalize and feel at home in?

If it's a building, is it ever thought of or actually experienced as a

whole? Or are there very different patterns of use and experience, where

each type of user sees the structure in a rather different context? And

further questions will be raised about how much to write, about what can

be neglected, about how to encourage readers to empathize with the sub-

ject. In the end the versimilitude of the characterization will be one

of its tests.

But completed scenarios also, hopefully, will answer many questions.

They can be of enormous value to the designer as a continued source of

information throughout the design process. Since designing is always

both a process of solving problems and raising new ones to be solved, it

is never possible to anticipate all information needs in advance. Some

may arise from specific configurational issues as the design evolves

(On Chandler Village: "I have a chance to put a clerestory window in

this location. It will catch the morning sun. What's the chance that

this living unit will all be filled with kids who want to sleep late?").

Other questions may stem from trade-offs that seem necessary ("Either

type A or type B has to be a two-story unit and only one can have ground

access. That means that the bedrooms have to be separated from the

living spaces in one of the two units--a more formal arrangement. Which

type of student would that fit best? Which type would be more likely to

want quick access?"). Still a third kind of question may arise by fore-

seeing solutions not envisioned in the program ("The program calls for a

post office and a space where a coffee shop could eventually be located.

Can't these be combined if they're located here? When are the kids likely

to want to go for their mail?"). To resolve any of these, the designer

requires a clear "fix" on the various users of the eventual environment.

Where programming and design are disjointed, or where the users are non-

existent a series of scenarios might provide enough of a picture of how

the range of users might react to allow the designer to answer his ques-

tions without making the trek into the field in search of more informa-

tion. Or, more commonly: it can now supplement his own personal experi-

ence—he is the client of last resort—as a basis for judgements.

Let me emphasize: the designer is always dealing with probabilities,

he can never account for all the varieties of behavior.   If a scenario

can capture some of the important motivations behind a user's choices,

it may allow inferences about how other choices might be made. Thus, a

scenario need not tell everything about a user (that's clearly impossible)

but just enough to allow the designer to identify with him. The problem

is akin to that of the actor on the stage.[5] He confronts words he has

never spoken, situations he has never experienced, a setting he has never

set foot in. How is he to "inhabit" the character of the play? The

"method acting" technique teaches that any part is accessible through

aspects of past experience. Empathy is the key: being able to mine the

resources of one's past and surface those reactions that are shared with

the person being portrayed. Method acting takes a lengthy period of

practice (that perhaps should be part of a designed education). A scenario can be a form of coaching: illuminating past experiences, triggering the kind of response that he might expect of those who will inhabit the designer's work.

What kind of a narrative is most evocative in terms of the choices the designer may likely have to make? An interesting case in point is a programming and design study by Brent Brolin and John Zeisel in which they evolved a design from second-hand sources.[6] Based on Herbert Gans' excellent protrayal of the life of West End residents of Boston prior to the clearance of that area, they derived a set of patterns[7] representing "social connections" that the designer ought to embody in his design. Describing their study they write:

> "Since Gans did not aim at a specifically architectural orientation, this pilot study and the resulting drawings are not able to cover all aspects of design-related living patterns. Furthermore, it is not quite clear what an 'architectural orientation' is. At first we picked those comments we felt could help the architect to meet the social needs of the community. We began with over 200 observations of behavior, most of which described an activity taking place in a physical setting...the observations most helpful to the architect possessed the following attributes: 1. a primary actor and his activity; 2. the significant others in the situation; and the relationship between the primary actor and the significant others." (8)

To rely exclusively on a written narrative describing life patterns surely means that not all the designers' questions will be answered directly, as Brolin and Zeisel note. Yet, the fact that over 200 inferences could be drawn and that the missing details were able to be filled in is clear evidence that they acquired enough confidence from Gans' portrayal to know who the West Enders would probably behave, given a new setting.

Gans' portrayal of the West End is in the anthropological tradition, and there are important parallels between the way that designers and anthropologists use information. Leaving his field situation, the anthropologist often has only a vague notion of the questions he will ask of his notes and impressions as he begins to generalize and communicate what he has seen to others. The test of whether he "knows enough" is whether he understands the constructs that underlie his subjects' behavior well enough to attempt a portrayal. Similarly, as I have noted, the designer knows only roughly at the outset what he needs to know as his work progresses. Yet he must know his user-client well enough to later make on-the-spot tests of his design. While it may appear redundant to include both patterns and scenarios in a design program, each fulfills a different purpose: patterns provide the outlines of the solution; scenarios enable the designer to fill in the details, by inference, and to make his choices along the way.

II

What follows is part of a scenario of a day in the life of a hypothetical student resident of Chandler Village. The scenario is presented fully in Appendix II. The accompanying notes record some of the thoughts and questions that were posed by writing the scenario. It was written after the design for Chandler Village was complete, but before its construction, as a way of testing what information might have been added to the process had scenarios been used as a tool in the programming process.

The scenario begins with a description of its subject:

Jody Gibbs is imagined to be a junior at the college, expect-
ing to major in education and become a primary school teacher. She
spent her high school years in Islip, Long Island, achieved medi-
ocre grades, attended a local junior college for a year until she
became dissatisfied with living at home, then chose Worcester from
among three or four smaller State Colleges she had visited before
graduating from high school...

The college enrols predominantly education students, a reflection of

its past image of a state Normal School. Over two-thirds are women.

Hence, the subject is imagined as part of the largest sub-group inhabit-

ing the campus. The issue that's immediately raised is how to construct

a typology of users in terms of predictable differences in their style

of inhabiting the housing (see further exploration of this in Chapter 3).

For the scenario, the variables that were assumed as important are: sex,

social class, college year, career orientation (professional, collegial,

academic, or athletic), number of years living in housing, whether the

living group was formed by the choice of its members or randomly. Be-

cause the permutations are enormous, a choice must be made about which

combinations will predominate. A scenario for each of the four or five

largest groups might serve the dual purpose of characterization of users

as well as allowing intergroup comparison. The preface pegs the subject

in terms of each of the variables. Names are exceptionally difficult to

invent, as any expectant parent will vouch, because so much of a person's

personality is invested in their sound. "Gibbs" turned up as the fif-

teenth name on a random page of the telephone directory (useful, if all

else fails). Jody sounded right for the early fifties.

The narrative begins in the morning:

- That girl's incorrigible. The radio must go on before she
opens her eyes—the same rock beat every morning. At least I've
learned to sleep through it until she clears the bathroom. And
she's learned to close my door when she passes by: slouch-slouch,
slouch-slouch. Some day I'll destroy those slippers!

Twenty-five minutes later Jody Gibbs languished on the edge
of her bed in her still-darkened room, aware that she was next in
line for the morning pilgrimage to the bathroom. She surveyed
the outlines of the past evening's good intentions: two reference
books on teaching reading...

A stylistic decision that has important substantive consequences:

first person or third, how should the narrative be written? That raises

a more basic question about what kind of information will be useful to a

designer. After thinking about what to include a mixed form was chosen:

third person to describe actions and the environments in which they are

set, first person for thoughts along the way, and dialogues in a conven-

tional format. Right from the beginning there's a need to begin visual-

izing space and relationships. The writer finds himself making judge-

ments about what to leave out—everything can't be recorded! So the in-

terior of the bathroom gets neglected ("the designers can handle that")

while bedroom-hallway relationships are reflected.

A few minutes later:

...Music continued to spill out of Joan's room as she passed.

- You can never tell what it'll be like living with people
until you actually try. Joan and I lived together last year in
the bullpen. We had no choice since both of us were new at the
college and we were thrown in with six others in a big unit over
near the entrance to Chandler Village. What an experience!
Thank god I had a meal pass, since trying to get that number
together to do anything was like trying to organize a circus.
By the end of the year we all kept our food in our rooms, since
you couldn't trust anyone, especially the two dozen guys who

were constantly squatting in our place, along with any other
places that would have them. This year, at least, we don't run
a revolving door. While we don't spend much time hassling it, we
seem to have made our peace about hours and taking turns to keep
the place running. At least all of us are pretty neat, even
Cynthia...

Part of the environment is other people and they also have to be

introduced. To do so, programmatic assumptions have to be made: that

new students would be placed in larger living groups where they were more

likely to meet a broad range of student-types, and not feel constrained

by life-style differences among living-mates, that in later years they

would choose a small group of friends to live with in apartment-like

quarters. This has consequences for both design and management. Writing

the scenario emphasizes how important those management decisions are.

Roommates have been introduced and Jody is upright, but we still

don't know Jody:

....Me? I guess the other girls think I'm a little too straight,
or maybe dull, and I guess I am. It'd help if I really knew where
I was headed, or if I had the guts to just pitch all this teaching
stuff and live it up for a while. Maybe in the spring!

Jody glanced at her watch as she emerged from the bathroom.
"Christ, it's nine-twenty already," she murmured. "Joanie, pour
me a cup, I'm running on my normal..."
"Aren't you going to mod-ren instruction this morning, Jod,"
Cynthia interjected.
"Cut it, Cyn, you know what happens for the first half of
that class." Jody's pace quickened. The blinds flew open. A
well-worn turtleneck was chosen from a rack of Villager clothes,
her mother's taste, which seldom saw the light of day. Fully
dressed, shortly Jody was perched at the...

The need to visualize clients as people, to describe personalities,

even if invented, makes one extraordinarily sensitive to anyone who

might be a surrogate. What might they look like? What makes people
live together? How do their feelings likely get played out in living
space? These are the grist of the novelist, but here we are dealing
with purposeful invention that is quite different and besides, program-
mers aren't novelists. (They departed ways long before recorded his-
tory: programmers want to dispel uncertainty; novelists thrive on it.)
A trip to a similar college helps. Memories are recalled and must be
checked. This sensitisation process is an important side-benefit for
programming.

Jody leaves her apartment for an early-morning class:

...The numbers moving towards class had thinned, but Jody noted a
classmate a few yards ahead.

"Fred, you also can't miss Professor Lekburg's sermonette?"

He turned, and in a few quick steps she was even with him.
The conversation wandered from the advantages of coming late for
the morning "Modern Instruction" class ("She looks at her watch
when late-comers arrive and realizes how long she has rambled
on"), to the thought that early morning classes ought to be
spiced with audio-video aids so that you can continue your slum-
ber when the room was darkened, to the fact that an education
student's day was so cut up that much of it gets spent walking
to and from the housing, to Fred's oblique comment that all that
would be solved by spending more time in the field. All the
while, the two walked apace towards the anonymous three story
brick structure, one of a line along Chandler Street, this one
dubbed the Education "Center." Past the Learning Resources
"Center," they navigated across an ocean of commuters' parked
cars...

Trying to detail a day makes one look carefully at curricula and
other ways that colleges structure their students' days. Is the flow
through classes highly organized along programmatic lines, or does the
college allow much freedom to students' putting a schedule together?

Does this shift from early to later college years? All of this will have

a bearing on how much time is spent in the housing, and on social rela-

tionships. The environment now begins to be seen in its institutional

context.

Jody has made it to her first class:

"...one of the most difficult problems you will face as teachers is
how to integrate the special events you will plan for your classes
with your day-to-day lesson plans--and I hope you will always re-
member to..."

    - Sometimes I wonder whether it's possible to learn anything
in the abstract about teaching. Hell, what do I know about kids?
This stuff simply washes over my head. When I see those kids
playing at recess at Chandler, I think, "Wow, I think I could do
some good for them." I mean, what they need is somebody to work
with them quietly in a one-to-one way and make them feel they can
actually do something. All those kids are going to be sitting in
these desks someday, trying to figure out what to do with their
lives and they've all got mothers at home telling them "do this"
or "do that". So instead they're all trying to please the tea-
cher--Thank god I'm out of that rut. But I'm still sitting here.
10:30. An hour to kill before her next class. That could have
been...

This raises a delicate issue, if working with both a formal and in-

formal client, in this case, a college administration and its students.

How much should a scenario reflect what the administrators think students

reaction ought to be to their daily fare, as opposed to the reality of it?

How typical can one person's reactions ever be, even if it is a stereo-

type being cast? Does the desire to create a personality, inevitably

conflict with the equal desire to generalize? There are no clear ans-

wers, only partial ones. Scenarios may not be the best devices for com-

municating with "official" clients in such cases. Perhaps alternate

scenarios ought to be sketched--one describing how an administrator might

envision a day spent, another from the viewpoint of a student. If there

are conflicts between them, there may be value in surfacing these.

Regardless, the writer is encouraged to dig deeper into his subject:

What motivates a student to choose education as a career? What is the in-

formal curricula that must effect this through the exposure of students

to others in their environment. The eventual users of an environment may

be only dimly aware of the ways that their setting might reinforce or

withhold reinforcement from the formal curriculum. Had the scenarios been

written a priori, college counsellors and others party to the conflicts

which students commonly experience, could have been instrumental in illum-

inating these points. Because of my ignorance, the scenarios may be

naive.

Between classes:

...After a minute or so of small talk she made her way to the coffee
machine, acknowledging several familiar forms along the way. But
most of the crowd were commuters, names and faces she had seen but
never known. Their friendships seemed to have more to do with what
schools they had attended before college than present circumstances.
Her mind wandered back to her freshman year on Long Island.

- When you're a commuter you don't sit, just stand. You're on
your way and either you like it or you don't, but you keep going.
These kids don't know what they are missing by staying at home.
They're always the first to buy college sweaters and jackets--
that's the way they remind their high school buddies they've gone
on to college. But at five o'clock, they're home, the guys are
raking leaves, the girls are talking to their old lady about some
shower or something. But I shouldn't be smug. What am I doing
here shifting from foot to foot?...

The scenario becomes a way of testing out an issue that surfaced

in dialogues with students but wasn't then completely understood.

During the programming process, fears of potential rift between commuters and residents were frequently expressed. What form would this take? Would it be rooted in different expectations towards the college experience? Is what Jody feels plausible? What could be done about it in the housing and elsewhere?

The narrowness of college experience was another issue raised by commuters, who perceived on-campus housing as a way to broaden the base of students they would encounter at the college. But what of the opposite side of the coin—how would campus residents feel? The question is explored as one writes:

> - Sometimes I feel good about living on campus, sometimes I wish I lived on a normal street in the city, in a normal house. God knows, it's a pretty narrow slice of life you find here. There are even two girls for every guy and it must be higher in the housing. The way they cluster around every available male body sitting on those concrete walls at the edge of the housing! Who needs it? They're right across the hall anyway and they think they ought to have a standing invitation into every women's suite. That's a thought—I wonder whether today's mail is in yet.

> As she enters the housing area, Jody stops to talk to Lisa and Ted, occupying their usual outdoor encampment on the grass at the corner of the low concrete wall.

> "Ted, did you tell me you saw Steve from last year?"
> "Yep, Yamaha and all. This year he's found a place where he can actually take the damned thing up into his room."
> "I don't miss the bike, but I wouldn't mind seeing him around. People who are quietly mad are a welcome relief from those who want the whole world to join their games, eh Lisa? Say, do you know if the mail's in yet?"
> "The truck came by twenty minutes ago, but I don't know if it's sorted."
> "I'll see."

> - God, how you come to depend upon mail when you're living in this outpost. John's letters have been tapering off since he was up here last. I don't know why, but...

Undergraduate years come rolling back! The mail room—that slender thread to the rest of the world—parents, money from home, old friends, even junk mail, anything! Up to now it had been one space among many; it's clearly much more than that. It's an area that demands special attention. Throughout the process of writing a scenario, some spaces begin to take on added meaning, others begin to seem totally unimportant.

Late in the afternoon, after a second round of classes:

> ...The daily frisbee games were in full swing as she turned the corner onto the Chandler Village street. Mainly regulars. Guys and a few girls spinning three frisbees in syncopated motion. A cadre of spectators lining the low walls bordering the street. Others leaning out of open windows above, carrying on a dual conversation with people inside and out. Two quick steps and Jody avoided the arc of a floating disc. She paused for a moment or two, then skipped up the steps, up the flight to her apartment. Cynthia and Lisa, half-turned, were watching the tag end of an old Perry Mason serial, evident from the dispirited look on Burger's face. "What, no radio accompaniment?" she thought. "Time to hold my piece." Jody passed silently along the corridor to her room. After a few minutes of compulsive tidying, she emerged, to the accompaniment of the MacDonald's All-American Burger Anthem...

Parts of the design begin to come into focus, not in the abstract, but in terms of what they mean to the residents. The environment is a stage—the small scale props begin to assume importance along with the larger forms and massing. Patterns are suggested: have these been included in the program? Am I sure these activities will occur? The author is encouraged to "stroll" through other parts of the place.

Evening reminds the author of another set of issues. How would the place change from day to night. In fact, wouldn't the evening be the peak occupancy time and shouldn't it be designed for that? Thoughts are

recorded:

> ...Books in hand, she headed for the college library--"Learning Re-
> sources Center," that is.

> - The place changes completely from day to evening. It's not
> as quiet, but certainly more peaceful. There must be a hundred
> stereos, radios, and TV's playing but they're all muted and you
> can still hear footsteps here on the street and the dim voices of
> people in conversation passing by. I love the warm glow of all
> those picture windows with draperies drawn, the low globe lights
> along the street, and the way the sidewalk tables of the coffee
> house bustle with animation. People sitting on the steps of the
> laundry, chatting in the cool evening breeze. The path's well lit
> to the library; it seems longer at night but I don't mind because
> there's a constant stream along the way. At night the rest of the
> campus doesn't exist, except maybe the gymnasium, but you have to
> make a special trip there...

Even when the story has been brought to a reasonable end, many ques-
tions about the format remain nagging. Does the desire to compress time
and tell a "good story" conflict with the observation that most days are
routine, that memorable experiences are only occasional? (Andy Warhol's
unedited movies leave most people who are not affectionados cold.) Need
a scenario be structured so linearly by time of day, or would an anec-
dotal form be equally useful? How can the desire for enough detail to
actually validate patterns be balanced against the desire for brevity?
Each of these are worth experiments in further scenarios.

III

Scenarios can be used in a variety of ways during the process of
programming and design. The obvious use, already noted, is to model
clients to help the designer know them, so he can make more intelligent

choices on their behalf. But as the previous notes indicate, writing a scenario also guides the programmer in his search for what it's important to know. They can also aid clients in communicating aspirations and reacting to the constructs of the program, if they are used as a basis for dialogue. They emphasize how an environment will need to fit its activity setting. Later in the process, they can be retraced in testing a sketch design, and they can serve as a understandable device for explaining how a design might actually feel to a lay audience who may find it difficult to read drawings. And, like packages, patterns and performance specifications, scenarios can constitute a useful starting point for successive design projects.

Early in a programming process, user-clients might be asked to describe verbally or write a sketch of how they could imagine themselves in the situation about to be designed. Keeping a diary for a few days or collecting the tracings of past experiences might help in making the projection. If several types of clients do this, it may become clear how much congruence there is among expectations. The programmer might use these as a departure point to probe the reasons behind the stories, asking: How often do you think you might do that? Why have you avoided saying anything about...? You mention that several times, does that have special significance? After discussion, the programmer might summarize these in a series of scenarios.

One place where scenarios might be especially useful is in attempting to gauge how new activities, set in new or modified environments, might be grafted onto existing routines of individuals. Consider the case of a

large university (Massachusetts Institute of Technology) attempting to grapple with the role of the arts in the day-to-day life of its community. Because of past traditions, artistic endeavors have been regarded as something of a diversion from its central mission, perhaps even as "curiosities." Activities in the arts have been developed mainly by individual entrepreneurs, quartered in a collection of found places, mostly on the periphery of the campus. The decision to place greater emphasis on the arts, and to do so by attempting to touch the lives of a broad segment of the university population rather than by importing a new artistic elite, runs some risks. On the one hand, new activities would fall flat if the opportunities are not visible or attractive enough. On the other, inserting a new layer of activities in an existing campus could change in negative ways the meaning it has to its students and faculty.

Should a single new center for the arts be constructed, or should activity spaces be carefully distributed throughout the campus? What activities might gain by being grouped together? What do students in science and engineering regard as artistic experience anyway? How do artists conceive of ways that they might contribute to the ambience of the university? Scenarios might be helpful in asking each of these questions and in making the decisions that will be required. A cross-section of students, faculty, administrative employees, and those engaged in the arts might be asked to describe how they could envision time being composed on a campus modified by the additions they think are desirable. These stories might be the beginnings of a dialogue.

Certainly many other factors will enter into the final decision—the exigencies of fund-raising, physical constraints on where new construction might be located, competing priorities and the like. But, to begin the process without an airing of where it might be headed is likely to mean overlooking significant opportunities.

When sketch plans are complete, scenarios can play another useful role in helping to test their likely quality. An interesting exploration of this kind was undertaken by Lawrence Kasser[9], in which he used the writing of two scenarios as a way of testing a design for a multi-use complex he had completed. From these flowed a host of new patterns and ideas for modifying the design. To name just a few: a way to redefine the relationship between a housing tower and parking structure based on tracing how a resident might move between them; a proposal to recess an elevator lobby in an alcove off a pedestrian concourse to offer separation between different types of users; design changes to shop fronts to heighten the variation experienced in moving along them. Most of these dealt with relationships that could not likely have been the subject of advance guidelines since they resulted from the particularities of the way the structures fit together. At a larger scale, the designers of Milton Keynes attempted to trace, using diagrams and words, typical trips to work by auto and bus. This was a way of testing how attractive each of the two options for movement might be in terms of time and experience.

I must re-emphasize: Scenarios are not ends in themselves, but process tools to be used creatively as a way of understanding the clients for design. While writing is an accessible medium, others may fit the

task better. The imaginative work of Sidney Brower of the Baltimore City Planning Department substitutes play for storytelling. Seeking explanations for why some children avoid using new backyard parks in residential areas, he has children enact with dolls on a large model of two square blocks what they might do out-of-doors. Through the process, children's attitudes and activities, fantasies and fears, become accessible to observors. This "play" is videotaped for showing to designers of parks, decision makers and the general public.

A second project with teenage kids, The Open City Program in Boston (directed by Stephen Carr and James Zien) made effective use of slides and sound tapes in a parallel way. After taking scores of slides in journeys around the city, each group (of 5 or 6) was asked to compose a story of an imaginary trip and to illustrate it with slides. Wonderfully phantasmagoric tales resulted, embodying the hopes, fears, anxieties and wishes of youngsters of that age. The contrast between the stories told by ghetto teens and their suburban counterparts was immediate and revealing. Perhaps no other device could have communicated as well with kids of that age.

Finally, there are dangers in the use of scenarios which must not be dismissed. One persistent hazard is constructing a reality that is inaccurate yet so convincing that it forms the basis for a design. Validation is as much a problem with this form of description as any other. Using scenarios demands that programmers or designers expose their imperfect thoughts. It may reveal gaps in understanding, fanciful thinking, an irreverence towards existing situations--all of which may do violence to a professional-client relationship which is founded on an inflated notion

of competence. Clients themselves might be unwilling to hazard an image of what the final environment should be like, supposing that they may be seen as hopelessly utopian—or equally unimaginative. The problem may be so unprecedented that patterns of use are only crudely predictable in advance. Preparing scenarios may be costly and, for problems which are well studied, redundant. However, a design can never be better than the understandings on which it is founded, except, perhaps, by accident. Taking the risks to clarify understandings early will ensure that we need not depend upon accidents.

FOOTNOTES: CHAPTER 7

1. Constance Perin uses the term scenario more broadly as a metaphor for the entire design program (Constance Perin, With Man in Mind, Cambridge, MIT Press, 1972, p. 132). I prefer a more restricted definition since the design program may include many fragments of the solution (e.g., patterns) and is not simply a representation of its use.

2. Kenneth Lasson, The Workers: Portraits of Nine American Job Holders.

3. Henry Miller, My Life and Times, Chicago: Playboy Press, 1973, pp. 28-9.

4. Lawrence Halprin, The RSVP Cycles, New York: Brazillier, 1969, p. 1.

5. For an interesting exploration of the dramatic analogy and the subject of scenarios see Lawrence Kasser, The Designer Prepares: Experiments in Method Design, Unpublished M.Arch. Thesis, MIT, 1973.

6. Brent Brolin and John Zeisel, "Mass Housing: Social Research and Design," Architectural Forum, July 1968, pp. 66-70.

7. The patterns were rather more simplified than those of Alexander, consisting of an observation--"...the normal tendency is for men and women to split up, the men in one room and the women in another;" and a requirement--"privacy between men and women's social areas." They do not deal with the ability of patterns to be generalized to other cases, but by their choice one assumes that they are specific to the West End subculture, since many more conventional relationships that apply to all housing are not present and have been added in the design.

8. Brolin and Zeisel, op.cit., p. 68.

9. Kasser, op.cit.

PART II

PUBLIC PARTICIPATION IN

PROGRAMMING

CHAPTER 8: PROCESS AND PRODUCT

Any programming technique represents a particular window on the
world: it suggests what is important to look at, illuminating certain
types of issues while casting little light on others. Thus, the several
techniques discussed in previous chapters are most useful when they
match purposes. They are wasteful, even counterproductive, when pursued
single-mindedly and when issues must be bent to fit a technique a pro-
grammer wishes to try. As Aaron Fleisher has observed, "Methods are like
public washrooms--they should be used when needed, but are not the place
to set up camp." What a programmer needs, therefore, is a firm sense of
what would constitute a "good process," and out of these notions will
evolve the logic of what techniques to use.

A "good process" is, foremost, one which results in the production
of high quality environments. But there are certain values which pertain
to the process itself, more or less independent of product. We may seek
widespread participation of people in decisions about environments which
affect their lives, not simply because this will result in settings which
better match their aspirations, but also because we value encouraging
people to have a sense of mastery over their surroundings. If a project
is aimed at producing a program for neighborhood environmental changes,
it may be judged successful if it serves the social function of initia-
ting friendships or reducing fears and social tensions among those who
are involved, as well as if a good program results. The experience of
being self-conscious about environments cannot help but rub off on other
aspects of everyday life: the employees of an organization who have debated

how to organize their spaces will inevitably extend the discussion to in-
terpersonal relationships; programming for a community health center will
raise questions about how professionals in the center relate to clients,
and each other, as well as how they map their customary activities in
space. Thus, process issues extend well beyond the logistics of how to
apply a series of pre-set techniques to a situation.

I

While every situation demands a somewhat unique process, there are
a number of commonly-encountered questions about how to involve people
in developing programs for their environments. These reappear frequently
enough to justify being singled out for attention. They include:

1. Who to involve? If everyone cannot (by reason of time or budget
or unknown clientship) participate, how can a sample of people be drawn
together that is representative of the larger constituency? How do dif-
ferent ties to the project suggest different forms of involvement?

2. How should people be organized to work together? Is it better
to involve many for a short time, or involve a small number of a more
lengthy period? Should people work in large or small groups—how does
the optimum size relate to the task? Are there advantages in making
working groups homogeneous or diverse?

3. How should working sessions be arranged? How can they be fit
into the variable schedules of ongoing activities and commitments? Who
organizes the agenda and work process? How can people's interest and
attention be maintained?

4. <u>How can the analysis be grounded in accurate data and experi-</u><u>ence?</u> Should data be collected by professionals or participants? How can one avoid overly shaping issues by the choice of what data to assemble? What forms of analysis should be undertaken by participants themselves? How can data be translated into workable program statements?

5. <u>How can normative views be encouraged?</u> What is the best way to surface views about "what ought to be," and how can these be reconciled with views about current problems? What devices might aid communication of "wishes"?

6. <u>How can the transition be made from "wishes" to firm proposals?</u> How can issues be "tracked" to be sure they have been addressed? How can differences be reconciled? How can predictions be made about the consequences of programmatic decisions?

7. <u>Who should be the managers and leaders of the process?</u> What makes an effective group leader? Should (s)he be a peer or an outsider? How does the type of process adopted affect the type of leadership that is needed?

The four chapters which follow are centered on these questions. Chapter 9 is a case study of a large and complicated participatory programming project. Ecologue is a particular approach to involving the users of an environment in discussing and formulating plans for it. The earlier description of the work of student consultants at Chandler Village involved some of the approaches of the Ecologue project, but in Cambridgeport the numbers involved were much larger, the time much

longer and the focus of activities was much more diffuse, even illu-

sive at times. The Ecologue project is described in some length be-

cause it represents an important example where process theories were

put to deliberate test. Chapter 10 steps back from the heat of action

and asks the general question of who should be involved in a program-

ming process. It deals particularly with typologizing the different

kinds of everyday users of an environment whose viewpoints it might be

valuable to hear. Chapter 11 is concerned with how to organize people

to work together, the logistics of arranging work, the introduction of

data and normative views, and some forms which participatory program-

ming might take. Each chapter is a mixture of first-hand experience,

from the case studies which preceed and follow, and ideas borrowed from

others.

II

One way that programming processes differ is in the form of pro-

ducts that are expected of them. A process which is aimed at neighbor-

hood organization to accomplish environmental and social change, where

professionals are present to get efforts started, inevitably looks dif-

ferent from one where there is a consultative arrangement between a

client and a professional to produce the specifications for a single

building project. The two types of processes will have different

rhythms, will have different rules guiding professional-user relation-

ships, will have greatly different emphases on the documentation of efforts. While I have defined the task of environmental programming quite broadly, there do appear to be a series of generic situations, each of which demands a different style of process and, in turn, emphasizes some of the questions noted above more than others. They are:

1. Environmental Diagnosis

Someone senses that there is a problem with the environments people are inhabiting--it could be a neighborhood resident, an activist, a campus planner, an employee of a large shared working space, etc. The problem is only vaguely formulated, the types of possible solutions are unknown (they may not even involve principally environmental changes), the source of resources or power to make changes has not yet been identified. The process will need to diagnose each of these issues, but most of all it will have to justify projects by coupling them with the means for accomplishment. The Ecologue project (Chapter 9) is one example of such a situation, as are the ad hoc efforts of many planning committees or agencies, managers of enterprises, downtown improvement groups, and the like. But diagnosis need not be voluntary nor separated from power as in Ecologue. A hospital or university planning staff can make periodic diagnoses of parts of their spatial environment, as a prelude for deciding when to commit directive programming. A workable process in cases of diagnosis will need to resolve especially who should be involved, how to sustain involvement given the voluntary character of participation or the remoteness of changes, and how to make the transition from wishes

to proposals.

2. Environmental Replacement

The environment of an existing organization or group is to be re-placed, modified, added-to, or combined with those of others. The essen-tial conditions are that there are on the scene and identified a set of people who will be affected (often quite large) and that a prior commit-ment has been made about the rough outlines of changes to occur. The purpose of the programming project is to prepare the exact specifications for the new or modified environment. A professional is usually engaged to direct the process, often an architect. Most architectural program-ming projects are of this type, but the category may also include pro-jects like the detailed programming of improvements in a transit corri-dor, the reorganization of services accompanying the move of an agency to new space, or the decisions on specifications for changes to an exis-ting city park.

The form of product which is sought and decisions already taken will often shape processes of this kind. A heavy emphasis may be placed on how analysis is grounded in accurate data and experience, on how to encourage normative views to surface, and on how to reconcile competing wishes in proposals.

3. Environmental Development

A new environment is to be created, but the clients are not yet on the scene, there are no established conventions about how it might work (often there are questions about whether it will work), there are con-

cerns about its indirect impacts on others, and a complicated set of choices must be made about timetable, financing, and accomplishment. Most private developers' projects fit this category, which also includes programming new public service facilities, the design of a new university campus, creating the space for a new department or function, developing a new type of environment which presumably will gather its own client, or creating a new public park or playground. The programming for Chandler Village (Chapter 3) is an example. The professional programmer may be on the scene at the outset or may join in midstream once initial course is set.

Essential process questions in such a situation are whether, and how it is possible to, involve those not yet on the scene, how accurate data and experience can be combined, and how proposals can be translated into actions. Who should lead the process, and how this may appropriately shift from stage to stage, must also be faced.

4. Environmental Management

In the course of the ongoing development, regulation, operation or management of an environment, an organization wishes to reappraise its policies or standards, taking account of its accumulated experience, and to adjust the way it makes decisions. An agency with zoning or regulatory responsibilities may come to this point, as might a new community developer, campus planning officer, or urban renewal agency involved in executing projects but facing difficulties. It may be done internally, or by engaging outsiders—important issues will often be who should

lead the process and how effective they will be in changing established ways of acting. Other essential questions will be whether or not to engage in outreach efforts that involve those who are impacted by decisions and how to assemble data and tap the experience of those who have been in a position to observe the results of current policies. If the reappraisal is perceived as a threat to some, the strategy for organizing participants to work together may be a crucial determinant of success.

Certainly these four categories of situations are not all-inclusive and may not be entirely separable--a project may begin as a diagnosis and end in a program for environmental replacement, for example, or may begin as a development venture and later require a management analysis. Moreover, the questions about process which get asked will be affected by the funds, time and staff available for facing the task and by what working methods have been found successful in the past. Particular processes have human and financial costs attached to them which must be weighed against what is to be gained. But that is not a reason to abandon theory about organizing processes altogether. As the Model Cities experience demonstrates, projects too frequently floundered because of the notion that if you could sit a group of well-intentioned people around a table together, a good program would result. Often no program emerged--only a bitter testimonial to the fact that people's ideas differed.

III

I have my biases about "good process" which should be confessed at the outset, for they will become evident as the chapters progress. Foremost, I believe that programming is always a social act. Any shifts in the character of environments that are meaningful to people inevitably upset what is accepted, and the programmer of changes has a firm responsibility to root such actions in the knowledge that changes are desired and will be accepted. Programming techniques which closet the professionals, insulating them from hearing about or experiencing the consequences of their proposals, are both dangerous and socially wrong.

Second, the creation of environments is often one of the clear opportunities for people to shift the pattern of their lives. The environment is a powerful intermediary which helps shape how we think of others. Its hidden messages tell us who is important and who is not, what behavior is to be encouraged, what will be frowned upon. If a process fails to ask what people would ideally like and simply concentrates on producing a minimally reinforcing environment where all the most serious problems have been ironed out, but where nothing more valued has been accomplished, then it has failed in terms of what it might have been. Opportunities not seized are failures just the same as decisions that are badly made.

Finally, I value processes which encourage professionals to learn and which allow that learning to be communicated to others. Learning means being explicit about theories that are used, and testing these by observing the results of action. It also means valuing the work of others and making creative use of precedents, not simply reinventing

what they have demonstrated. And it implies the willingness to abandon techniques when they are replaced by others which prove more effective.

CHAPTER 9: PROGRAMMING AS A SOCIAL ACTION PROCESS: ECOLOGUE IN CAMBRIDGEPORT

Ultimately, my environmental programming process is a form of social intervention, whether it is aimed at changing the settings of daily life or reshaping the uses to which settings are put. Few of us walk around with clearly-formulated views about what we would like to see happen to our surroundings; expectations lie in amorphous form at the back of our consciousness, to be surfaced when decisions need to be made, when we are forced to react, when we are thrust into positions of having to propose, or when the circumstances of our lives shift radically. Expectations may evolve, change or be reinforced and clarified as a result of seeing the outcomes of how we act. And we will inevitably see the world differently when we try to change it.

Since most of us live in an urban society, or at least one in which we depend upon others' actions for our livelihood, making deliberate changes to the environments we share means reconciling our expectations with others' and coming to some agreement upon collective action. This is a difficult process and it seldom occurs in local neighborhoods, except when their inhabitants are faced with some real or imagined threat: a highway is planned to cut a swath through the area; urban renewal threatens the homes of residents; the neighborhood is being taken over by "outsiders" and old-timers fear property values may decline; or conversely, new residents are of sufficient number that they attempt to band together to "upgrade" the neighborhood. The more usual case, though, is that

neighborhoods change gradually through individual actions. Residents who are dissatisfied or are upward-bound move out, properties deteriorate or are improved depending upon the image of the area and prevailing market forces, an industry closes its doors setting off a chain reaction where employees find jobs elsewhere and eventually move. All of this occurs without collective circumspection. A set of subtle unspoken clues becomes the barometer of where the neighborhood is headed: a block which seems inhabited by new faces; "trouble" in the schools; three junked cars on a vacant lot; accelerated conversion of large houses into apartments. Feeling powerless to shape events, residents make spearate plans to protect their own livelihood and investments. This process is being played out in thousands of innder city communities and its toll may be measured in alienation, fear, and dissappointment.

I

The Cambridgeport Ecologue Project is a case of environmental diagnosis in an inner city neighborhood. It was designed as an experiment to probe whether an ongoing programming process could enable a neighborhood to coalesce around common goals while at the same time providing a cadre of residents, organized and willing to devote energies to accomplishing specific projects.[1] Mounted by a group of students and faculty from MIT, some of whom lived in the neighborhood, the project had the additional aim of testing the Ecologue approach to participatory programming. The project directors were Stephen Carr, an environmental researcher and designer who was a resident of the area, and Philip Herr, a planner with

wide experience in working with local communities. Modest funding
(about $60,000) from the Office of Education of the Federal Department
of Health, Education and Welfare (HEW) and from the City of Cambridge,
provided enough money to open a store-front headquarters, to hire some
10 neighborhood residents as Community Planning Aides ($40 per week),
to pay participants in the program for meetings they attended ($5 per
week for 15 weeks), and to cover expenses of the program. After a
lengthy hiatus in awaiting funding for the project, it began in earnest
in the fall of 1971 and continued through the late spring of 1972, when
funds ran out and follow-up grants were not forthcoming.

Ecologue was the umbrella for an organizing strategy, a sequence of
pre-planned activities to extend over about 10 sessions and, most impor-
tantly, a series of theories about neighbhorhood change, environmental
education, social organization, and collective action. Many of these
departed significantly from attempts during the sixties to do participa-
tory planning, The guiding theories may be summarized as follows:

1. The authors of Ecologue attributed part of the failure of pre-
vious participatory planning to the situation which is created when resi-
dents are asked to preside over the year-to-year distribution of funds
(to a neighborhood which always needed more than they were able to do)
but are given none of the resources or skills to make intelligent deci-
sions. The professionals retain the data, the expertise to identify
funding sources, and remain the most knowledgeable about the longer range
effects of immediate actions. Writing in their grant application, the

Ecologue organizers labelled this arrangement a "mistaken assumption":

> "First, it was apparently assumed that, if only the profes-
> sionals would listen, neighborhood residents were prepared
> to articulate the underlying causes of their dissatisfactions
> with the neighborhood. Not surprisingly, many proposals
> emerging from resident groups are directed toward the immed-
> iate gratifications of marginally-improved or extended ser-
> vices (e.g., demands for "cleaner streets"), which are, in
> professional estimation, without long-range consequence for
> the community. Edgar and Jean Cahn argue that such proposals
> are the result of an improperly phrased question: when resi-
> dents are asked 'What do you want?', they respond, under-
> standably, as the consumers of public services, and conse-
> quently produce a shopping list of 'needs' which professionals
> then deliberate over as alternative targers for the deployment
> of resources. Presumably, citizens might evolve more imagin-
> ative and substantial proposals if they were treated as the
> producers, rather than consumers of social goods--if they were
> asked the same question that professional planners ask them-
> selves: 'How should we invest the available resources?'".

Thus, the organizers of Ecologue believed that something more than

money was needed to intelligently shape the future: it was rather more

important to have an agreed-upon vision of how residents would like to

see the neighborhood evolve. Ecologue was viewed as more of a planning

tool than a distributive mechanism, and early conversations with the

City resulted in some funding and informed assurances that the outcomes

of the process would be incorporated in the Department of Development

and Planning's ongoing work. It was believed that, with a plan in hand,

neighborhood residents could react to outside proposals in more than

ad hoc ways, and that resources would eventually be forthcoming (in fact,

easier to locate) if residents had firmly in mind what they wanted done.

Moreover, human resources in terms of residents' time and energy (not

normally accounted for in program budgeting) might be brought into play

to accomplish many projects without extensive outside funding.

2. A prerequisite for any realistic collective plan of a neighbor-
hood is that it be based in the residents' understanding of their own
self-interest and an equal knowledge of others' self-interest. Collec-
tive interest (or the "public interest" as it is sometimes called) can
only be arrived at through a process of finding areas where individuals
interests overlap with others', or making agreed-upon trade-offs, or for-
ming coalitions around non-competitive sets of objectives. This means
rubbing shoulders with people a resident might never have contact with,
including those whom he may blame for the area's problems. Underlying
this call for confronting diverse values was a set of theories about
human identity-formation. The grant application stated:

> "Mutual misperceptions of self-interest between groups is, in
> part, promoted by lack of social contact and first-hand infor-
> mation, but also is not entirely accidental. One mode in which
> people preserve their status and identity is that of refusing
> to objectively confront values or life-styles fundamentally
> different from their own...This premise is supported by R.D.
> Laing's formulation of the 'social fantasy system,' the mem-
> bers of which are both defended and gratified by their fan-
> tasies about each other's identity, and by Richard Sennett's
> concept of the 'purified community' whose members maintain an
> artificial unity by postponing, as long as possible, an
> acknowledgement of objective diversity."

The core of the Ecologue methodology consisted of experience de-
signed to help individuals clarify their thoughts and feelings about
their neighborhood and its future, measuring these against others'
views. It was assumed that this would begin the process of mutual re-
spect and commitment necessary to see them achieved. Residents were
asked to record important places and neighborhood qualities, to put on

paper what they would like to see the area become and to try to recon-
cile these statements with those of others who were both like and unlike
themselves. Dialogues about these personal and collective positions
could then become the springboard for specific action proposals.

3. The best form of organization for carrying out neighborhood
changes can be decided only after formulating an action plan, not before,
and certainly not in response to some real or imagined threat. The Eco-
logue staff argued that local action organizations—especially those
which grew out of OEO-funded programs—lacked the openness, sensitivity
to diverse needs, and broad-based structure to allow meaningful parti-
cipation in changing a neighborhood. Proposing the experiment, they
wrote:

> "In practice, the ideology of participation has been implemented
> through rather conventional bureaucratic hierarchies which are
> intentionally structured for communication only at the top—
> the 'mind' of the organization—while most people are put in
> the role of a merely reactive political 'body'...Whether neigh-
> borhood 'planning teams' or boards and councils are appointed
> or elected matters little. To most local neighborhood residents
> they are simply another oligarchic elite which, along with its
> professional staff, assumes the full responsibility for decision
> making in all its dimensions—analyzing, problem-defining, pro-
> posing, negotiating, etc. Conveniently, the neighborhood re-
> presentatives turn out often to be the same "spokesmen" with
> whom the planners have often dealt. But, even when there is a
> shift in the cast of characters which constitute the planning
> 'mind', the relationship between that 'mind' and its constitu-
> ent 'body' remains largely unchanged."

By arguing that both issues and organization ougth to emerge out of
a shared experience, Ecologue flew in the face of much prevailing theory,
especially that under the rubric of "issue organizing." "Such tactics,"
they noted, "while unifying some factions, prematurely alienate and pola-

rize others, forcing internal conflicts before groups are able to develop
a realistic sense of each others' interest." Moreover, they rejected the
character of dialogue which commonly occurs through "issue organizing":

> "The issue must have unequivocal widespred appeal--which, in
> practice, means that it plays upon fear and the existence or
> creation of an external enemy or scapegoat against which re-
> sidents can release repressed frustration. These criteria
> for an issue, of course, preclude dealing with any of the
> subtle internal stresses which may affect the community and
> also set the stage for violence and potentially self-defeating
> confrontations between the community and the scapegoat."

Taken together, this rejection of both the bureaucratic form of com-
munity organization and the tactics of "issue organizing" had several im-
portant consequences for the design and management of the Ecologue program.
First, it meant that the project leaders felt no great commitment or need
during the early stages to operate within the structure of existing neigh-
borhood organizations. Although they sought and received the sponsorship
of the local OEO-funded Cambridgeport Planning Team, as a practical mat-
ter, Ecologue was run with total independence. A similar distance was
kept from the Cambridgeport Residents Union (CRU). The hope was expressed
on a number of occasions that some new organization might emerge at the
end of Ecologue which would bridge across all neighborhood factions. This
did eventually occur, although in ways none had anticipated. Second, the
leaders of Ecologue felt it essential to engage the full range of the
neighborhood's residents, not simply the most vocal "community leaders" or
those who expressed interest in single issues. The fact that this was a
demonstration project to test the workability of methods for individuals
with all kinds of backgrounds was a further argument for this policy.

The selection procedure began with a randome sample of the entire neighborhood population, and carefully accounted for the full spectrum of residents. A number of "volunteers" were actually turned down at the start of the project. Third, the insistence that action should only follow reflection led to postponing stands on issues that arose early in the project. This divided the program into two distinct segments—first analysis and planning, then proposals and action—and created difficult problems of transition between the two. And fourth, by upsetting the mode of neighborhood action which some participants had experienced prior to joining the program, it meant that the old rules no longer could be relied upon. Uncertain about how to act, there developed an increased dependence on Ecologue leaders to orchestrate the activities and provide direction for the group.

4. The proper role of professionals is as a resource, available to a community as their instrument: they should be able to help a community analyze "felt needs," be willing to assist by outlining ways they can organize to act, and be able to provide detailed technical backup when the community calls for it. This is a form of advocacy planning, but one which concentrates on process, rather than on pleading the cause of specific proposals. In the words of the Ecologue grant proposal:

> "It is clear to us that the professional should come to participatory planning, not equipped merely with his expertise at analysis and decision-making, but with a process which renders analysis and decision-making viable enterprises for the residents themselves. What is lacking is a method of operation which creates a functional interface between technician and layman, between absentee specialist and the resident generalist."

But process and product turned out to be extraordinarily difficult to separate, and the question "What do you see coming out of this process" was repeatedly voiced. The response was usually to throw the ball back to the questioner: "Whatever you and others who live here think ought to be done," which was not entirely believable since the leaders still had a firm hand on the wheel of the group.

5. Socio-spatial groups are the most significant building block for a lasting action group. This theory was both normative (localism and informed social ties ought to be reinforced) and descriptive (the most productive working group, is shared expectations are the issue, is likely to be friends). The theory was based on familiar research on territoriality and cultural ecology and one consequence was the choice of small friendship groups as the working parties. It was explained:

> "Ecologue is organized on an infrastructure of small, natural friendship groups. Such informal groups, along with kinship groups and formal institutions, are a basic unit of social structure within lower income urban communities (this unit may not hold for suburban communities, except for children and mothers). Friendship groups are chosen, rather than families, because they are more nearly voluntary and therefore likely to be based on shared interests or life circumstances. Unlike many organizations and institutions which are controlled by or related to a set of interests outside the community, friendship groups emphasize the horizontal structure of the community."

Taking this as a starting point, there still remained the issue of constructing a typology of residents to serve as entry points to the community networks. The most important variables were considered: point on the life cycle, sex, race, and tenancy in the neighborhood. A tricky issue was how to involve some of the large number of persons whose friends

lived predominantly outside the neighborhood. For these, artificial groups were formed, by joining people with similar characteristics.

Each of the project leaders brought different skills to Ecologue and, in turn, they tended to differentiate their roles. Stephen Carr, responsible for many of the methods, had come to believe in the urgency of putting in the hands of non-professionals the tools which designers and researchers frequently use for their own purposes to assess "user needs." His commitment was ideological--to the deprofessionalization of planning and design--and because he was a resident of the neighborhood, he felt the added responsibility to ensure that actions resulted from this project. Carr served as the day-to-day project leader, and as the first-line advocate of the methods' appropriateness. Philip Herr brought a slightly different slant to the project: "I'm interested in whether these methods can produce better quality plans and designs." Operating in a somewhat more detached way, he was effective in reconciling conflicts, pressing to ensure that organizational issues got resolved, and keeping the lid on the project when events lurched out of control. Philip Dowds, a planning student, was the manager of the project's details: finances, weekly work assignments, renovation and maintenance of the storefront. A genius for making things happen, Dowds prepared most of the scores for weekly sessions, thereby translating ideas into concrete tasks. William Cavellini, also a planning student, drew on his prior experience as a community organizer to develop and maintain an easy rapport with most of the participants, particularly those who had previously considered themselves part of an excluded minority. His efforts

were invaluable in recruiting and maintaining a diverse group.

II

Cambridgeport is an older district of Cambridge, ignomiously labelled a "gray area" because it exhibits many of the signs thought to forecast neighborhood decline. Its natural boundaries are the Charles River on the south and on the north, the declining commercial district at Central Square along Massachusetts Avenue (see map in Figure 16). The eastern edge of Cambridgeport consists of the remains of a once-active industrial area, now several large loft structures (candy, box and shoe factories, etc.) and a collection of warehouses (paints, building supplies, a trucking terminal, etc.). Some 45 acres in this area were acquired and cleared by MIT (the "Simplex Project") at the height of its expansionary fervor, and during a time when the market for office space and luxury housing seemed bottomless. But, optimism aside, the land has remained vacant and is viewed by many in the neighborhood as having dislocated jobs and created an eyesore. Where Cambridgeport ends and its sister neighborhood begins to the west is less clear: one working definition is that Riverside is the area impacted by Harvard and Cambridgeport the area impacted by MIT. For the Ecologue project, River Street was considered the edge of the neighborhood, although a small number of participants came from beyond this boundary.

Developed around the turn of the century, Cambridgeport has remained predominantly a residential area, today housing approximately 9,100 persons in about 3500 housing units. Houses along its gridiron streets
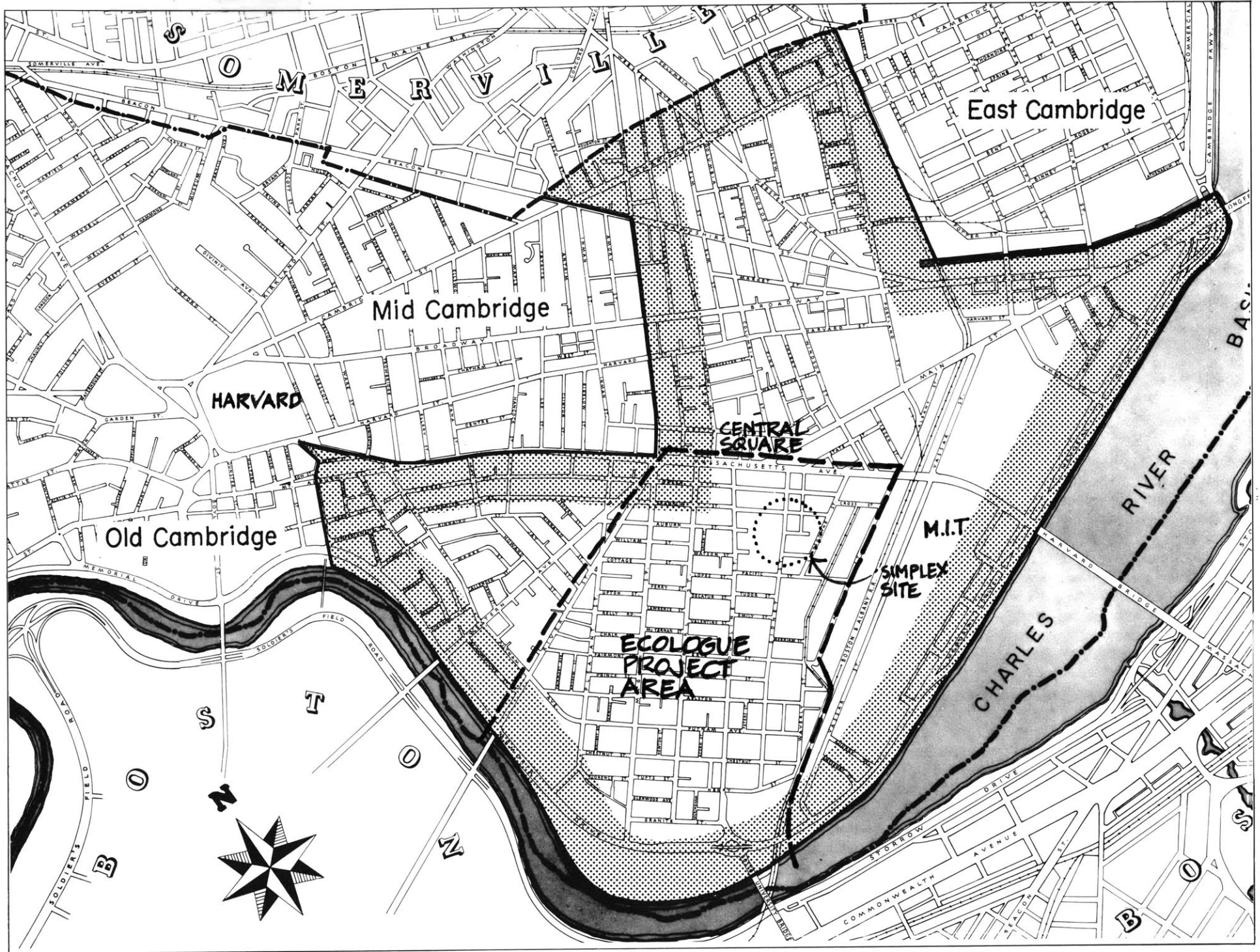
FIGURE 16: Ecologue Project Area -- Cambridgeport

are a hodge-podge of single family structures in "carpenter gothic," frame duplexes and triple deckers, and larger brick or frame apartments (see photographs in Figures 17 and 18). Most of the larger houses have been cut up into apartments and a substantial number of backlots contain houses added in the twenties. The quality of housing varies block by block: some blocks are carefully-maintained set-pieces of Cambridge environment; others are dotted with examples of neglect; still others are run-down beyond the point of retrieval. Tables 3 and 4 summarize some of the important data about housing in Cambridgeport, and its population.

Cambridgeport remains a working class neighborhood, but over the past decade, it has experienced an influx of students, low income residents and, to a lesser extent, young professionals including those associated with MIT. From 1960 to 1970, its population showed a slight decline and significant shifts in profile, with a steep increase in young adults and elderly and a corresponding loss of middle-aged residents. Today, about one of five Cambridgeport residents is of college age. In terms of ethnicity, it has a sizeable Greek community and in recent years has attracted a growing number of blacks together with Spanish-speaking and Portuguese immigrants. Recent arrivals have tended to locate at the edges of the community, especially on the east and west. Perhaps because of its ethnic fragmentation, the community has had little success in electing residents to city-wide office; the power in Cambridge has traditionally resided with the larger blocks: Italians, academics and, more recently, also Blacks. While many residents feel disenfranchised, the community has maintained relatively conflict-free schools, a reasonable

Magazine Street

Residential Street

River Street

FIGURE 17: Street Scenes, Cambridgeport Neighborhood

Neighborhood Park

Deteriorating Housing

Simplex Site

FIGURE 18: Cambridgeport Neighborhood

Table 3: Housing in Cambridgeport (1970)

	Number	Percentage
Total housing units	3518	100
Renter occupied units	2736	
Owner occupied units	673	
Vacant	109	
Owned by Cambridgeport residents	1680	
Owned by Cambridge residents	406	
Owned by absentee-landlords	793	
Undesignated or unknown	640	
In structures with less than 6 units	1508	
In structures with more than 6 units	1371	
Undesignated or unknown	640	

Source: Cambridgeport Ecologue Project, from Census and Assessment Data

Table 4: Population Characteristics (1970)

	Number	Percentage
Total Population	9139	100
0-17 years of age	2193	24.0
19-24	1670	18.3
25-34	1540	16.9
35-54	1771	19.4
65 years or over	1054	11.5
Primary individuals (living alone or with unrelated persons)	1298	14.2
Primary individuals 65 or over	327	3.6
Now married	3280	35.9
Never married	2846	31.2

Source: Cambridgeport Ecologue Project, from Census and Assessment Data

level of services, and active political organizations.

III

Ecologue began in earnest in early September, 1971. A core of neighborhood Community Planning Aides (CPA's) along with the four project leaders had been marking time since the previous spring, awaiting the outcome of negotiations on funding the program. In the interregnum, they had assembled basic data about the neighborhood, clarified objectives and sketched an outline for the first 10 of the 15 sessions they planned to mount. By September the funding was assured and 6 Student Planning Aides (SPA's) signed on to serve in parallel roles to the CPA's.

The first task was to line up the 100 or so participants they had funding to support. This was complicated by the fact that nobody had a clear picture of neighborhood composition, especially in terms of the characteristics they thought were important in composing the groups. Thus, a two step process was adopted: first, they would interview a random sample of 100 neighborhood residents to get base data and probe issues such as group membership, length of residence, participation in local affairs and perceptions of problems; then, from this sample, about 20 "convenors" would be chosen and asked to form a group with four or five of their local friends. These friendship groups hopefully would mirror the larger population of the neighborhood. The sample was drawn, questionnaires were designed and in mid-September a workshop was held to instruct students and residents (both about equally nervous) on interviewing techniques. Two frantic weeks of interviewing netted about 65 completed questionnaires

and by the beginning of October, only the intransigent and fleet-of-foot remained to be contacted. The long months of hoping the program would get off the ground were finally past!

On October 6, all who had been interviewed were invited to attend an open meeting, sponsored by the Cambridgeport Planning Team and held at the Morse Community School, to hear the program explained. About 80 people were present, including staff and about a dozen activists who attended such sessions out of habit. After disposing with reports of various active neighborhood committees, the Ecologue staff was introduced and Stephen Carr gave a spirited description of the program. He emphasized that they could make no guarantees about outcomes, these would depend entirely on the groups' interests. Many were confused about how they could actually join the program, especially those who had not been interviewed:

RESIDENT: Will group leaders only be chosen from among those already sampled? Does that mean I can't join?

CARR: Yes, probably. But we haven't filled our quota and, if people fill out forms tonight, they will be put onto the list.

RESIDENT: I don't understand--who picks the groups?

HERR: The process will be random. We will contact one person, he'll get the others from among his friends.

RESIDENT: I can see where when someone forms a friendship group, it'll turn into just a friendship group and not get anything done.

HERR: That's o.k.--we want people to have a good time--but there's a job to be done too and people will be paid for doing it...

ACTIVIST: How are you going to ensure fair representation from all parts of the community?

HERR: We tried all kinds of ways of cutting the pie geographically,

but found we culdn't get it down to 20 groups. So we have come to the conclusion that a random sample is best...

ACTIVIST: There seems to be a limitation--will convenors choose a homo-enous group? Is that what you want? Won't that cut down on the range?

RESIDENT: Maybe--it's only a suggestion--groups can think about who's missing and include them in.

RESIDENT: Would it be possible to have volunteer groups--doing the same things but without pay?

HERR: We've thought about that but came to the conclusion that it's valuable work we're asking you to do and so you should be paid. And we only have funds for 20 groups...

The audience was becoming restless with the detail. Teenagers at the back began to jostle, small conversations began around the room. One member of the audience interjected to change the subject:

RESIDENT: (emphatically) We came here because there are problems in our neighborhood environment. Can we talk about that now or do we have to join a group?

CARR: What kinds of problems?

RESIDENT: For instance, there's a park that's dangerous--broken glass, kids hanging around and threatening me when I walk by...I think we should get busy and do something about it...

CARR: Other may see the problems differently. It might be good to talk to the teens at the back about how they see them.

RESIDENT: No way! They'd say "go away lady"!...

ACTIVIST: People should know that there are groups around here working on actual implementation now. There's the Planning Team and the housing committee and the teen center and the job commit-tee and...

CARR: (cautiously) We're not trying to compete. We hope the outcome will be people working with organizations.

The debate continued with further frustration expressed over the fact that they would have to depend upon the luck of the draw to be asked in the door. Many of these concerns were to surface again later: worries over exclusion, threats to established groups, the desire to get on with issues. But overall, the meeting was cordial, lively conversation followed, and a fine tone was set for the project. At a staff de-briefing Phil Herr remarked, "We just may have a chance. Every couple of weeks we reach a crisis and we didn't bomb out tonight. So if we make it through the first couple of months, we just may have a project...I didn't hear anything to change our basic strategy." In one student's words, "The meeting was a real 'up'".

The following Tuesday initiated what was to become a weekly planning session to review progress and discuss session plans. More feedback was voiced on the open meeting, the seeds of further controversies: "Some of the people didn't understand what's going on." "I'm getting feedback about paying participants--it will attract a certain kind of people." "Some people expected we'd talk about issues and were disappointed. That may have been a fault of our publicity--we had to say something in the sound truck." Special concern was voiced over the teenagers' commitment--"They were attracted by the possibility of easy money"--and whether they would disappear when the money ran out. Carr cited his past experience as evidence that that was not true.

The meeting then turned to the most important business at hand: constructing a group typology and drawing convenors. Prior to the session, Herr and Dowds had chosen 15 names randomly but the distribution was less

than ideal: all the teenagers were boys, too many elderly turned up, too many of the young adults were volunteers. A second attempt was made by drawing from groups stratified by age, producing better results except, again, among the teenagers who remained all boys from one area of the district. After a lengthy debate the group decided to abandon the draw for teenagers and to hand-pick groups off the street. Each CPA and SPA was given names or a teen group to recruit as convenors and the first scheduled activity--the "zero session" which consisted of structured conversation with each participant--was explained and discussed. Finally, CPA's and SPA's were asked about preferences in terms of working partners with the leaders making match-ups prior to the next weekly meeting.

Towards the end of this planning session, some anxieties began to suface among CPA's. They were being asked to "sell" the program, but many were unfamiliar with the details of what would actually happen in each session. They were embarking on a process where the end-products could not be known in advance. They were being asked to trust the intentions of the Ecologue team; in turn, they were asking residents to trust them that the experience would be meaningful.

The recruitment process proved more difficult than imagined. Confronted by a suspicious community (the robbery-related murder of a local storekeeper had left its mark), and uncertain of themselves of the program, CPA's were encountering three or four turn-downs for everyone who accepted the role of convenor. One CPA was almost thrown down the stairs when she tried to make a tactful exit from an elderly gentleman's apartment after he seized the opportunity to recite his problems to some-

one other than the four walls. Several Planning Aides had encountered

individuals who were willing, but did not have three or four friends in

the neighborhood to form a group. After some discussion, it was decided

that "acquaintances" would be sufficient and that, as a last resort, ar-

tificial groups of like individuals could be formed. Finding people who

were willing to come out at night to meetings was another problem and

the notion that meetings might be held at home was briefly entertained,

but rejected because of worries over adequate working conditions and

because of the desire to forge program identity by having all activity

occur in one central place. Throughout the discussion, the leaders held

firm: the groups were to be randomly chosen, friendship-based if at all

possible, and representative of community composition.

By the beginning of November, enough groups were beginning to fall

into place to provide some assurance the program would indeed get off

the ground, and the pulse of the project quickened. Several groups, to

be sure, had to be recruited by less-than-random methods, as one stu-

dent's account indicated:

> "We found the [teenage] group lounging near the basketball
> courts, just rapping. A short half-hour talk did little to
> allay the natural suspicions one has when offered, out of
> the blue, 15-week involvement for pay, but it did get their
> agreement to participate. Indeed, my impression was, from
> their staccato answers, apparent confusion, and lack of en-
> thusiasm, that only the money countered their profound dis-
> interest although they did ask if they would get what they
> asked for in the end."

Students and young adults also proved difficult to recruit because

of their unpredictable schedules and because often they knew few other

residents:

"Originally a student had been randomly selected to pick a friendship group. He had great difficulty in doing it and eventually dropped out of the project altogether. [A CPA] found a friend of hers who was interested—he found two others. Information about the project found these people tortuously."

A third kind of difficulty was in locating middle-aged fathers who generally pleaded lack of time when they were approached. Later, after repeated attempts at recruitment, a departure was made from the standard agenda: a condensed program would be devised that could be completed in three or four all-day sessions on Saturdays. Two groups (one of fathers, one mixed group) eventually worked with such a timetable.

Taken together, the working groups did fall reasonably within the intended categories. Each chose a name:

The Clapp group (4 persons) - members of an extended family of longtime white residents

The Challengers (5) - husband-wife teams and a relative, all black and younger middle age

Friends of Hastings Square Garden Club (5) - young unmarried adults of college age, white, both men and women

The Nameless (4) - white women, ranging from teen to middle-age including two housewives

The Pleasant group (3) - black women, all unmarried and middle-aged. A fourth young white father dropped out of this group near the beginning.

The Lee group (3) - black, middle-aged, married men and women

The Senior Clan (3) - elderly white women, all of whom lived in a nursing home

Young Adults (3) - white man and women, college students, two of whom lived slightly outside the area

<u>Teenage Boys</u> (5) - black teenage boys, a tight-knit friendship group

<u>The Internationals</u> (4) - middle-aged white housewives, longstanding home-owners in the area

<u>The Bridge</u> (4) - an assorted group of generally young white adults

<u>Teenage Girls</u> (3) - young black teenage girls

<u>The Thinkers</u> (3) - young white adults, one of whom had run for City Council, the remaining two were members of his campaign team

<u>Freyas</u> (5) - white teenage girls, friends before the process

<u>Los Dedos</u> (4) - a mixed group of upper middle-aged married persons

<u>The Fathers Fore</u> (4) - white working-class middle-aged fathers, homeowners in the area

<u>The Vultures</u> (4) - white teenage boys

While the participants numbered only about 65, each of the final 17 groups did remain active throughout the process. A CPA-SPA team was assigned responsibility for each.

Before the planned sessions could begin, additional issues needed attention and the way that these were resolved set a course that would influence later events. One dealt with the working relationships which might be established with outside bodies, particularly the City and MIT. As part of the cooperation agreement, the City had assigned a planner to monitor the Ecologue project and attempt to integrate its products into the City's plans. At a planning session early in November, he outlined the format of the Community Renewal Program (CRP), the City's neighborhood planning effort, pointing to an early deadline on assembling basic information, especially on neighborhood recreation needs. In turn he

asked what kinds of information the city ought to collect to help Eco-
logue. This was the first introduction of a substantive issue, nobody
knew quite how to react:

PLANNER: What you have before you is our distilled thinking of what
                  we want to put in the report now. At this point, if you
                  could just take a look at what's written down here and just
                  say whether you're interested in it, that would be best...

DOWDS: The point is not that we'll settle anything overnight—just
                  let's get the process started...

CPA: Well, I don't know how to react. I'd like all kinds of in-
                  formation on the city level and local, but there's scads
                  available now. We can start by cataloguing what's avail-
                  able now in each of these categories.

PLANNER: There's no way to do that properly, we would want you to
                  say which information you want, then we'll go after it and
                  try to dig it up from what's available or get new informa-
                  tion.

HERR: We're in a classical circular situation. We don't know
                  what information we'll want till we know what the informa-
                  tion says. For example, we might have traffic problems,
                  but we won't know that till we have some traffic counts.
                  But we don't want to go out and get the traffic counts
                  unless somebody thinks we have a traffic problem...

CPA (later):   What I want to know is whether we go to them at CRP as an
                  individual or as Ecologue?

CARR: We aren't in a position now [to go as a group]. But as the
                  groups go down the road and need information, we'll want to
                  encourage them to go to them [CRP] and ask for it. That's
                  why I'd like some index of how difficult it is to get in-
                  formation.

CAVELLINI: I don't understand what we're discussing here, it seems
                  like it is premature.

Other substantive issues that arose early in the program were also
deferred, until groups could advance far enough to be able to take a posi-
tion. Left hanging in the balance was what role Ecologue might play in

the City's planning efforts. Interviewed later, the planner was asked

what he hoped they would get out of the project. He responded,

> "Precisely the list of priorities for neighborhood improvements
> ...To a certain extent the priorities will be narrow because
> they won't consider resources outside of the neighborhood—for
> example, housing in East Cambridge which might solve some Cam-
> bridgeport problems. It's not just playing, despite what others
> think. CRU is doing a highly realistic thing too. What Eco-
> logue is doing is asking the right questions, what CRU is doing
> is going to the people who can answer them and asking the wrong
> questions...But I think only if Ecologue gets hooked up with
> CRU, will it have a big impact after the money stops."

Another planner, responsible for the Cambridgeport component of the

CRP, reported growing fears among the established organizations about Eco-

logue's competition. "When you try to create something new, you dilute

the energies and its natural that existing organizations suffer," he noted.

The detractor's red flag seemed to be the issue of paying participants:

"The issue of pay is a real one, and ought to be aired. Either people in

Ecologue are going to have to talk it out with members of CRU and the Plan-

ning Team, or they'll have to stop paying the people." Speaking for the

City, he expressed the dilemma of competing interests in the neighborhood,

noting, "We've promised Ecologue our drafts, but we won't subject ourselves

to their review because that would strengthen Ecologue as an organization

in competition with other organizations." Representatives of the City con-

tinued to attend Ecologue meetings, but drafts never appeared.

The possibility of forging a working relationship with MIT floundered

on other grounds. To many of the participants and leaders, especially

those who had been active in neighborhood affairs, MIT was simply not to

be trusted, for a variety of reasons: the influx of students into the

neighborhood was distressing to long-term residents--it raised rents and disturbed their life styles; MIT was a poor landlord for properties they owned in the neighborhod; the Institute had cleared a source of jobs and then used outright deception to hide its development intentions. But several of the students and staff of Ecologue also, apparently, sought to distance themselves from their parent, to avoid being tagged as running a "pacification program." Phil Herr differed, and urged bridge-building to allow Ecologue an input to MIT's Simplex Plans. He proposed that they respond to an approach from the MIT Planning Office by asking for a small budget to prepare a neighborhood plan for the project. This set the stage for a heated debate, that extended over two planning sessions. An excerpt:

HERR: ...The chances are greater now than later to influence MIT, because they will be hardening their plans...

CARR: They're not going to listen to us, they just want us to rubber stamp their plans. And they're not to be trusted. Last spring they came down here and told us they had no plans for Simplex while people in the office we knew said they were forging ahead...

HERR: We're being supported by MIT now, how's that different?

CAVELLINI: They don't have any say over what we're doing, but taking money from them would put us in their bag.

CPA: We need somebody in at MIT if we're going to have an effect...

CARR: MIT needs us more than we need them!

The debate waged on, with several CPA's urging that all organizations in the neighborhood be involved in a dialogue. Another reminded the group that they weren't in a position to start planning now. "I hope you realize that the relationship in January will be a lot different than it is

now," was Herr's parting comment.

A final detail concerned adding to the complement of CPA's to administer the program. Eight resident CPA's were firm; many had been active since the spring. In October, one CPA dropped out because of lack of time, and somewhat later, a second withdrew because of a death in the family. When the second vacancy occurred there was no time for debate since the program was about to begin, and it was filled quickly by a person who had participated in the earlier pilot project. The first vacancy though, became something of a test of who was actually running the project and a clash over styles of communication.

Through a misunderstanding, both Carr and a CPA had recruited a replacement. Carr's candidate had been asked earlier to participate, but declined because she did not have the time for the demanding schedule of interviews. Several CPA's resented the fact that she "didn't come in for the heavy work." The CPA's candidate was a former State represenative, familiar to many of the residents. When conflicts such as this arose, Carr's inclination was to talk the issue out until some consensus was reached, a process that exposed all the raw edges of differences. Working that way, time became an elastic commodity, with more sessions added if all the issues weren't covered. A number of the resident CPA's were accustomed to a less patient form of resolution: plead your case, vote, and bury any differences that might have prompted the controversy. As the debate crawled on, frustration arose. Points were made and reiterated. Compromises were explored. Devil's advocates spun out the unlikely. Someone tried to shift the debate to "principles rather than personalities."

Finally the CPA who had made the original proposal slammed the table,

stopping the debate. "Put it to a vote--cut the chicken shit." Thereupon

followed the only formal vote of the project, with the CPA's candidate

the victor. The point had been won, but subtly, "talking it out" was

firmly implanted as the working style for Ecologue.

The four leaders, six students, and ten CPA's were ready to begin

the 15 weekly sessions. The CPA's included:

> A black mother, in her 30's, with no prior experience in neighbor-
> hood action

> A white husband and wife, in their early 40's, longtime residents
> who had been active in local affairs

> A black street-person, in his late 20's, self-described as a some-
> time con-artist, with no experience in neighborhood action

> An unmarried, matronly black woman, about 40, who had served as
> officer in several neighborhood groups

> A black mother, also active in local groups, about 40

> A black teenager, who had demonstrated outstanding leadership in
> youth work in the neighborhood

> A white 45-year old homeowner and father, who had previously served
> as a State Representative

> A black college student in his early 20's

> A white mother, about 40, a homeowner in the area who had partici-
> pated in several neighborhood activities

IV

Ecologue returned to the Morse School on November 14 for the first

session of the program, where the schedule for the additional eight "core"

sessions were explained (see Summary on following pages) and the leaders

and CPA's spoke of their hopes for the program. "The neighborhood is like

a house," Stephen Carr explained, "where everybody is different and has

his or her own problems and hopes, but where they gain by helping each other out." The analogy was applied to commonly-cited neighborhood problems and Carr concluded, "If we can come to a better understanding of neighborhood groups and the way they each see the neighborhood we will have accomplished something." Some of these attending saw the problem in terms of getting more resources to do something which, in turn, hinged on political power:

PARTICIPANT: One thing I want to know is why Cambridgeport and River-
                side never got no money to do nothing. Model Cities got
                all the money. Over there, they have improved their
                houses...

CARR: Why do you think they got it?

PARTICIPANT: I think they knew the right people.

CARR: I agree, but it also takes a neighborhood knowing what
                they want to do...

CPA: Up to now for 14 years, 7 of the councilmen came from the
                Fresh Pond Area [upper-income Cambridge]. We've got to
                get people running and elected to get things done in the
                area...

PARTICIPANT (Teenage boy): I want to know why there are 3 teen centers
                on Cambridge Street and none here. Is that because of
                Velluchi [mayor of city who lives near there]?

This marked the first time that a teenager had spoken up at a public meeting and some measure of pride was felt by the organizers over having structured a situation where the teens felt comfortable in contributing. However, the SPA later expressed some concern over the tone of their comments: "The teenagers were cynical; they though the only way you can get anything done is by pulling strings. That's ok, and they may be right,

but they're starting in a skeptical way and that won't get them the teen center."

After the orientation meeting, the project settled into a familiar routine. Tuesday evenings the staff, CPA's and SPA's would assemble at the Ecologue headquarters to talk about the flow of events, discuss the upcoming work session and sometimes rehearse their roles. The meetings generally lasted late into the evening; sometimes they were testy, other times they crawled along like a disjointed parody of a Pinter play. Prior to the Tuesday meeting, Phil Dowds would have prepared a detailed and generally lucid "How-to-Do-It" instruction sheet for the upcoming session. Occasionally these were challenged by SPA's and CPA's and revisions were made but, in the main, advance-planning of sessions was left to Dowds and other members of the staff. After the Tuesday sessions, CPA's, SPA's and staff in teams of two would meet once weekly with the small groups. They would work their way through the agenda, sometimes elaborating or transforming it to fit the group's members. For some groups, finding a time to meet was a herculean task which taxed the ingenuity of their organizers. By the third or fourth session, each of the groups had developed its own style and the role Planning Aides had to be improvised to fit it. Some groups took their assignments seriously, did them with care, and expressed measured satisfaction in the new things they were learning about themselves and friends from these new experiences. This was characteristic of groups of college-age people, middle-aged housewives, black mothers, black teen-age girls and boys, and the elderly. Other groups seemed impatient with the detail, completed the tasks in a perfunctory manner or resisted them,

OUTLINE OF THE CORE ACTIVITIES OF THE ECOLOGUE PROJECT (SESSIONS 1-9)

SESSION	ACTIVITIES	AIM OF ACTIVITIES
0	Participants are interviewed individually by CPA/SPA team	Obtain a benchmark on participants backgrounds and attitudes. Develop rapport between CPA/SPA team and participants. Dispell any uncertainty about program.
1	Orientation meeting for entire body of participants. Explain sequence of events. Distribute cameras to all and explain 1st assignment: photo documenting of important neighborhood places and qualities	Allow participants to meet others in the program. Allow important questions to be surfaced so small groups can take account of them. Implant urgency of program. Familiarize with planned sequence of events
2	Small-group discussion of results of interviews, surfacing what members feel is important, special skills and experience of members. Draw individual sketch maps of most frequently used or important neighborhood places.	Allow participants to meet, in low-pressured way, others they will be working with most closely. Allow comparison of commonality and differences of goals, problems. Allow each to describe their "turf"
3	Small-group discussion of sketch maps noting areas of overlap, common places and reasons for differences. Each participant draws a map or picture of an "ideal" neighborhood environment. Film collected from photo-documentary assignment, to be processed for next session	Allow beginning of understanding of how different turf and experience might lead to different attitudes about neighborhood. Explore areas of common concern. Begin participants thinking normatively about the neighborhood --what it should become
4	Preparation of individual neighborhood photo map by gluing contact prints of photos he has taken on base map. Photos are coded and key is prepared to chart data on places: what, why photographed, frequency of use, like or dislike, etc.	Begin to tie down important qualities of neighborhood, fix these in space, think about areas of great potential or problems. Supplement means of explanation of feelings to aid discussion
5	Small groups review individual ideal plans, talk about similarities and differences. CPA/SPA's try to summarize main themes running through plans and to contrast each	Allow understanding of how expectations fit or misfit, why they are held and how they interact with others!

SESSION	ACTIVITIES	AIM OF ACTIVITIES
6	Small groups prepare list of goals for a collective ideal Cambridgeport, including assumptions about the future, positive aspects of the area, problems, and environmental goals. Lists are scored to decide on priorities	Translate general feelings into more specific statements and begin to assign priorities to each. Provide a basis for a collective ideal neighborhood. Begin to focus normative views on Cambridgeport
7	Prepare a group turf map, combining the important neighborhood places of all members. Revise list of goals and turf map based on discussion. Review photos and decide which to enlarge (and to what size) for illustrating group ideal environment (next session)	Provide a context, in terms of the group's turf, for proposals. Allow further adjustment of goals based on this context. Begin making decisions about specific environmental qualities
8	Prepare a large group ideal neighborhood sketch, illustrating this through photographic, pictures from other sources and words. Assign priorities to different aspects of sketch	Summarize the group's thinking about what the neighborhood should become. Provide a document to communicate these ideas to others
9	Open house to display group products (turf maps, lists, ideal neighborhood) to other groups and outsiders. Groups decide which other group products are most like and most unlike theirs. Informal discussion and socializing.	Allow a chance to exchange ideas, an exposure to differences, an opportunity for outsiders to see what has been happening. Begin to create a group esprit. Provide a basis for beginning proposal-centered work.

then attempted to turn the agenda onto what they thought was important. A group of young white political activists, a team of black 30-year olds, and a group of white teenage boys (whose real agenda was social) were notable examples.

Partly, the group's directions also depended upon the kind of leadership exerted by the CPA/SPA/Staff team working with it. There was a wide variation in their group process skills, in their ability to relate to partners and participants, and in their commitment to the program and its ends. For many students and resident CPA's, this was their first experience in a leadership role and each reacted differently. Some who had broad faith in the program stuck closely to the instructions, buttressing uncertainty by frequent references to how individual tasks would contribute to the whole. Others (often students) sought to "relate" first on interpersonal grounds, sometimes meeting with participants outside and program and translating the instructions into terms that they thought were more meaningful to participants. Faced with an unresponsive group, a third strategy was to lead with a firm hand, laying a personal set of priorities over the formal activities. Two older male CPA's chose this response.

Often there was a disparity in the time available, in leadership abilities, and in understanding of the program between SPA's and their resident counterparts. Much of the burden for keeping groups active then fell to the students. One student expressed the dilemma in his diary:

"The session proceeded well after that except for one thing.
I realized after the session had been in progress for a
while that [the CPA partner] had not said a thing. I looked
up and caught her just watching everything forlornly. She
more or less stayed out of the session's activity. I felt
arrogant and insensitive, but did nothing as a remedy. I was
too involved in making the session work for [participant],
[participant], and myself. I think next week can be better,
but I know she feels I've left her out. I have been prepar-
ing everything myself recently. That's evident to her, but
she is not really sure what has to be done for each session."

In about half the teams tensions such as these developed. They were

understandable due to the differing importance of the program in Planning

Aides' lives. For many students it was the centerpiece of their academic

work, they could tie its intentions to their intellectual and personal

development, and they had an almost infinite amount of time and energy to

pour into it. For many residents it was a sideline to maintaining their

roles as breadearner or mother or part of a family and social circle.

There were exceptions, of course, but commitment, or the lack of it, be-

came one of the most divisive problems of Ecologue.

What follows is an encapsulation of events during the first nine ses-

sions of Ecologue, with particular emphasis on the role the methods played

in the life of different groups. Reference to the session summary (pages

-     ) will aid in charting the flow of activities.

SESSION TWO

Small groups met for the first time during the week of November 22-29

to talk over the views they had expressed personally in their interviews.

Planning Aides had done their homework, abstracting areas of agreement and

differences, and in most groups the session began with a recital of some
of these findings. Frequently these were picked up and a conversation
ensued about substantive issues.

Several Planning Aides, however, found that they had fence-mending
to do in terms of allaying suspicions about Ecologue. One SPA reported:

> "At first [participant] ran the show. He seemed particularly
> interested in 'getting me' (i.e., in the evaluation he des-
> cribed the session: "Foreman loses control of meeting'). In
> part he seemed to be testing out the program, through its
> mouthpiece, me. I think he also resented having the group led
> by someone he felt had no right or justification to lead, and
> no interest in the welfare of the neighborhood."

In other groups, skepticism was played out through a coolness of re-
sponse and Planning Aides had to coax comments into the open. The oppo-
site problem occurred in tight-knit groups where the pattern of interac-
tion which prevailed before Ecologue carried over into this discussion.
Among teenage groups, for example, the gang leader would respond, others
would simply back him up. Another group, consisting of a defeated candi-
date for office and two of his campaign staff, followed the same pattern:

> "We had prepared a list of issues for this group, which...read
> like a campaign platform (crime, drugs, housing, community
> participation, etc.). Unfortunately, the group responded a bit
> like the campaign staff it had been only a short time before.
> [Participant A] supplied the detailed answers. [Participants B
> and C] either introduced his remarks or filled them out. I
> would ask a question looking at them all and it seemed expected
> that [A] would answer..."

In still other groups equal participation was hampered by deference
paid to close friends or family members. As one CPA put it, "I don't
blame them for not arguing with each other--they have to live together."

Planning Aides, feeling their way through this initial discussion found they had to lead each of their groups in very different ways.

The second half of the session was devoted to preparing sketch maps of the neighborhood, recording their personal "turf." Reactions again varied widely. For a few it was a threat. Some teenage kids thought it was suspiciously like schoolwork and resisted. To people who were skeptical about the program, it was further confirmation that it was "academic", and would amount to nothing useful. A few elderly had great difficulty drawing and had to be aided. But, once begun, most participants went at it in a light-hearted way. Spirits picked up as streets and places began to multiply. A few participants apologized that their products appeared "unprofessional," but they were proud of them nevertheless. The maps completed, most group sessions ended on a high note.

SESSION THREE

This session had the dual objective of comparing participants perceptions about what was important about the neighborhood, and then moving on to prepare individual maps of an "ideal neighborhood." But for many groups, the discussion of important neighborhood features turned out to be a re-hash of the previous session's discussion and group leaders often cut the discussion short to avoid redundancy. There seemed to be two causes. Participants seemed more accustomed to thinking in "issue" terms than spatially. Thus, a discussion which started with the comment that a particular store seemed to appear on everyone's maps, for example, would more often than not continue as an exploration of the issue of lack of

shopping opportunities, a point which had been made previously. Participants were also inclined to minimize rather than emphasize differences between their turf maps, further reinforcing the conciliatory pattern of the previous session. As many saw it, they were there to find common grounds for friendship, not to fight with each other.

By now, most of the participants had gotten past the shock of putting pencil to paper in order to produce a drawing. But sketching an ideal neighborhood posed other problems: how radical should I be? will I seem silly if my drawing is too far out? what's the point of showing something that can't be realized? will I be able to draw what I have in mind? How-To-Do-It-3 offered participants several options:

> "Now you have a chance to describe what would be an 'ideal' or 'perfect' neighborhood for you to live in. You can do this in one of several ways:
> 1. Describe a 'fantasy' or imaginary place. Don't worry about whether it's realistic or possible. Just make it exactly the way you want it, even if you know there is no such place...
> 2. Describe a place or neighborhood someplace else in the world...No matter where, it should be a place which you think would be ideal to live in.
> 3. Describe how Cambridgeport should be changed (what should be added, what should be eliminated, etc.) to make it ideal or perfect for you to live in."

More often than not, the Planning Aides were surprised by the drawings that were produced. They revealed dimensions of participants that had never surfaced and said a good deal about people's commitments to the present and to Cambridgeport (see a detailed analysis in Chapter 10).

Overall, 69 participants completed ideal maps in styles ranging wildly from Grandma Moses' American to no-nonsense Naval Ordinance. Grouped in

terms of how far they departed from Cambridgeport:

18 showed mainly the existing area with slight, often remedial, changes

5 showed the existing area, but proposed large changes, often major restructuring of streets

11 produced neighborhoods very different from Cambridgeport, but made a few references back to the area

35 produced neighborhoods with no resemblance to Cambridgeport, including one detailed analogy elsewhere and 5 that were pure fantasy and not neighborhoods at all

In general, men produced neighborhoods that were less of a departure than women; increasing tenure in the area and age tended to produce ideal neighborhoods that were closer to what existed. Action-centered people tended to resist fantasy. Typically, group members' visions were roughly similar in their degree of departure.

The reasons for this, however, are not straightforward. Group influences (and occasional conversation) may have subtly limited the range of departure; but it is also true that friendship-based groups, often people with similar life circumstances, could be expected to show some uniformity of attitudes. Thus, probably the two factors were closely linked.

Some of the spirit of the session devoted to group maps is captured in Planning Aides' reports:

"The ideal maps proved to be almost no trouble. There was much less hesitancy than I expected. Again [Participant A] surprised me by being perhaps the most enthusiastic about this task, even advising others that the map didn't need to bear any resemblance to the present Cambridgeport. [Participant B], who had balked at drawing the neighborhood map to the point where I drew it with his direction now exhibited little hesitancy (his map wasn't a radical change but was sharp and vivid). [Participant C], who had seemed quite meek, drew his own map, fairly conventional despite [A's] assertions that it need not be. [Participant C] was

sufficiently into his map by the end of the session that he
set up a time with me on Saturday to finish it...I got so
interested in the idea of ideal maps, I began thinking of my
own and mentioned it idly, whereupon all present encouraged
me to do one. I did." (SPA for black teenage boys)

"Drawing the ideal maps was a task everyone enjoyed and was
interested through...There's always a difficulty for people
serious about issues to relate to fun, 'arty' tasks in a
serious way..."   (SPA for young adult group)

"The mapping and graphic tasks seemed to have little meaning
for this group. All of these tasks seemed to be regarded as
something for the benefit of the Ecologue staff (for research)
despite our attempts to explain that they were intended for
the benefit of the group..." (SPA for black 3-year old group)

"The ideal maps were another story, seemingly. All the group
members had great difficulty projecting. They refused to
dream or fantasize, insisting that things cost too much and
major changes would dislocate people. After much coaxing on
my part one participant did include a number of things she
wanted but had little hope would be realized. The same parti-
cipant that had trouble starting his neighborhood map had
trouble with this task. It had nothing to do with his drawing
ability which was good, but rather with not knowing where to
start and what to put down." (SPA for mixed group of middle-
aged blacks and whites)

"Oddly enough, although the teens intended their ideal neighbor-
hood maps to be 'silly,' that task turned out to be the most
useful. With one exception, these maps were loose assemblies
of words, phrases, and vaguely erotic sketches which referred
to alcohol, drugs, sex and petty crime. These issues seemed
to be of much more central and personal concern to the teens
than the basketball courts, and the little leverage I was able
to get on the group grew, in large measure, from taking the
'silly' ideal maps seriously and developing a discussion around
them." (SPA for white teenage boys)

SESSION FOUR

The exercise of cutting up contact sheets of the photographs, pasting

these on base-maps and completing the lengthy key is remembered almost uni-

versally a dead-spot on the Ecologue calendar. Some took it lightheartedly,

but to others, who were still skeptical about the program's realism, it was clear evidence that the academics had won the day. At least one group had to schedule a special session to restore confidence in the aims of the program. A number of the photographs were totally blank--the cameras had not worked--which added further insult. Adjectives ranged from "disappointing" downward: "bureaucratic", "threatening", "mickey-mouse", "meaningless", "make-work", "mechanical". The irony was that, for many participants, the process of taking pictures about the neighborhood was a highlight of the program. One participant noted, "Photographing the neighborhood was the greatest thing I've done in years. All of a sudden I was looking at stuff I had passed by but never seen--great architectural details, fantastic blocks, cool places." In retrospect, the assignment was an uncomfortable hangover of the researcher's mania for quantifying, cataloguing, and comparing. A simple discussion about why people took photographs would have served the purpose.

SESSION FIVE

This meeting was a chance to recoup interest and credibility from the previous session. Focus returned to the group ideal maps, and many group leaders were able to make effective use of the drawings to spur discussion about proposals, rather than issues. Hours of hard labor over the photo maps provided some Planning Aides with a few additional questions and insights. However, a familiar problem reoccurred when group leaders sought to emphasize differences. One participant's response was: "Sure, it's natural that my neighborhood doesn't have tot lots because I don't have

children. [Participant B's] map does because she's looking for places to take her child. And because [B] is my friend, I think the neighborhood should have such places."

Preparing for this session, Planning Aides had mounted all of the group's products to date on the walls of the meeting room. When some groups arrived, this ignited a spark of enthusiasm that animated the discussion. It provided an impetus to take stock, revive forgotten ideas, recount experiences. Carr said of his group, "Session 5 was terrific! All that stuff on the walls...They really got into why they liked and disliked the neighborhood...Just great!" A dissenting boice concerned the teen groups, the illusive barriers to serious discussions had still not been broken.

But by Session 5, some impatience was beginning to show about continuing with programmed 'exercises'. People's opening lines had been exhausted, they had had the chance to explore their colleague's interests, and subtly a shift began towards finding tangible bases for collaboration. Four Planning Aides remarked upon how participation in discussions amoung members of adult groups seemed to become more equal at about this point. Several of the groups began to become intensively interested in one or two issues. "Station identification" was over, and, for many, the time had come to begin the program.

SESSION SIX

This began a series of three sessions which were to culminate in displaying each group's products at the planned Open House (Session 9).

How groups used Session 6 depended on how they had come to terms with each other and the project, and how close they were to settling upon action proposals.

The session required extensive preparation. Planning Aides were expected to scour all the documents produced to date, including minutes recorded during each of the meetings, and to produce a series of four lists: assumptions that participants seemed to be making about Cambridgeport's future; positive aspects of the area that had been mentioned; problems that had surfaced; and environmental goals either expressed or implied. The plan was to discuss these lists, make additions and deletions, and to vote on priorities, producing a shortened list. This would serve as an agenda for meeting with other groups and reaching out to other neighborhood residents.

Groups that were poised and ready to hone in on proposals saw this as an opportunity to shift into gear. Their discussions were lengthy and spiced with proposals. Frequently they made it through only part of the lists before they became exhausted, and a resumption was planned for Session 7. Groups which felt more comfortable dealing in verbal terms than in maps or photographs generally found the session stimulating. By assigning a score of 1 to 10 to items on each list a combined priority rank could be computed. While some participants labelled this process "mechanical" and others objected to the generality of lists, the consensus seemed to be that it was a useful platform on which to build proposals. Several thought this session ought to have occured at the beginning-- eliminating the "busy-work assignments."

Session 6 had been planned for the week of January 11 to 18, with a target of completing all preparation for the Open House by the end of the month. But, as Phil Dowds put it at the weekly planning meeting, "We have a few groups that are desperately behind." One group had not even seriously begun its work. A second group had completed only the interviews. Several others were behind up to three sessions. Overall, only half were on schedule. Partly because of the massive effort required to mount Session 6, and partly because nagging doubts remained about where the program was headed, several Planning Aides and staff were simmering over what they considered a cop-out on the part of their colleagues.

The discussion began innocuously enough, with a Student Planning Aide confessing to problems in scheduling meetings with a group of black 30-year olds. Others confided similar frustrations with groups that simply did not appear when they said they would. The comment touched a sensitive nerve:

CAVELLINI: Look, maybe this is not the time to bring this up, but I'm also getting pissed off not only about [CPA 'B'] but also [SPA] and [CPA 'C'] who never show up for these meetings...

DOWDS: I don't think this is the place that we should be talking about people who aren't here but I feel two things: we've made a commitment to people we've brought into the program with some difficulty...and we're spending money that could be put into other things in the neighborhood...I'm running ragged filling in for CPA's that don't show. I've been taking care of four or five groups...

CPA 'A':   It makes me wonder why I'm busting my ass. If CPA's can't pull their load they ought to resign...

Others also expressed resentment about the inequality of time commitments, but tempers ebbed and the group tried various schemes for reallocating

manpower, explored implementing a condensed schedule and considered dis-

continuing two groups.

CPA 'A':   How much attrition do you expect to incur in a program such as
            this? I mean, is it going to go any further?

DOWDS: No, I don't think it is going badly.

Suddenly, the two absent CPA's burst through the door, continuing their

animated conversation, as if oblivious to the ongoing meeting. The dis-

cussion froze, then:

CAVELLINI: (to the new arrivals) I got aggravated tonight. Some people
            got here early because they had to leave early. (Heatedly)
            I got here early and I'm pissed that nobody was here. And
            now you show up when we're damned near finished. (The two
            are taken aback.)

CPA 'A':   (pushing further) When are you two going to start pulling
            your load?...(The new arrivals are enraged. Expletives fly
            back and forth.)

CPA 'B':   (newly arrived) Who do you think I am? (passionately) I'm
            not an MIT student or professor! I'm an 18-year-old former
            drug addict trying to do my best. If that's not enough...

At this point the second offending CPA lost his temper completely and

shouted a full vocabulary of expletives at his accusers, CPA 'A' and his

wife, who had planned to leave early, decided it was time to make a

graceful exit:

CPA 'B':   (sarcastically) Don't take this to heart. I don't mean any
            animosity...

CPA 'C':   I'm resigning! I'm resigning! I don't care what you call it.
            I'm quitting.

CPA 'B':   You ain't quitting!

CPA 'C': Damned right. (to CPA 'A') Your head's going to roll. Your
          head's going to roll. I'll get you, goddammit. (He lurches
          toward him.)

CPA: (matronly black woman) Step back. Step right back. We'll have
          no threats around here...

Her influence prevailed, and the two accused CPA's sat silently at the

edge of the room for ten minutes, then slipped away. If every project is

destined to have at least one crisis it had been reached in this meeting.

Emotions were surfaced (although not buried; three CPA's trace their

later disillusionment to this point), relations and _esprit_ improved stea-

dily thereafter. The push began to prepare for the Open House.

SESSION SEVEN

This session was brief for most groups. Discussions continued on

goal lists until a final set was arrived at. Planning Aides had prepared

a composite turf map which prompted a few comments, mainly to the point

of emphasis (the Fathers Fore group wanted to make sure that the bar by

the same name where they spent their time was featured prominently). But

nearly half of the groups felt that the time had long since passed to be

fooling with maps, and this latest one was approved with only cursory in-

spection.

The discussion about what to show on a group ideal neighborhood map,

and what materials to assemble for it, proved more spirited. Photographs

taken at the start were pored over again for ones that were suitable for

enlargement. Members recalled magazine illustrations that were "just

right." Other groups parcelled the tasks of looking for specific illus-

trations, or agreed to bring a selection of magazines to Session 8. One

SPA was asked if he could locate "some architectural magazines--you know,

the ones with real modern buildings." Additional film was made available

for any group that wished to take more pictures and a few accepted the of-

fer. In a number of groups there was a noticeable excitement in the air

about doing a group plan.

SESSION EIGHT

Gigantic sheets of paper together with a battery of markers and equip-

ment were provided for the group ideal map; they were to be grand visions

in size as well as substance. Most groups accepted the challenge, some-

times too vigorously:

> "Our final ideal group neighborhood map turned out as purely
> fantasy--an exercise in optimism. Perhaps we should all aim
> for the impossible. However, we did discuss the importance
> of all kinds of people, bicycle paths, a coop bakery, cafes
> and restaurants, and--best of all--the passenger steam(boat)
> to Boston on the unpolluted Charles." (CPA for young white
> adults)

Indeed, that drawing had over 80 entries and is a minor classic in parti-

cipatory art.

Each of the 17 group ideal neighborhoods had a distinct character,

and what appeared did not always flow from prior discussions or documents

(see Chapter 11 for a detailed analysis of the relationship of products to

process). Many group maps proved more fantastic than any of the earlier

individual drawings and an important question is why this occurred. Are

fantasies an antidote to reality, or hopes for the future? Phil Dowds

expressed dismay about one of his groups:

> "The priority-ranked lists of problems, goals, etc., corre-
> sponded very well to my own impressions of the group's
> shared values and interests...Least satisfactory was the
> group ideal map which, with its rigorously-segregated land
> uses, emphasis on wealth and luxury and outright snobbery,
> was something of a shock to me. It seems to me now that
> the map was not wholly irrelevant, but that it tapped a
> level of fantasy and desire which had not previously surfaced.
> All four participants were quite pleased with it when it was
> finished, and the map probably has some important things to
> say about the group which just weren't said anywhere else.
> I'm simply disappointed that the ideal map didn't express
> more of the genuine positive feelings the women share about
> their area."   [middle-aged white mothers group]

One example of misfit, Dowds explained, was the decision to include a low-

density shopping mall, collecting all stores under one roof, despite re-

peated discussion earlier about the virtues of having small stores nearby

your home, getting to know the merchant, and the like. The group persisted

with their Center, despite Dowds' reminders of past conversations.

Because it was a projective task, a few groups again required some

coaching to spur them into action:

> "I confess to some pessimism before this session about being
> able to produce a valid, interesting ideal map. Initially
> that pessimism seemed justified. The teenagers were interested
> in the pictures and each guy kept pointing out those pictures
> he had taken himself. My hints about the necessity of doing
> the map were semi-ignored and even lightly-mocked: but finally,
> we decided to start by drawing the river. Since no one would
> begin, I volunteered to draw the river. Within 20 seconds I
> received criticism from many sides about my river and they as-
> sumed the job. They loosened up. I loosened up. We even
> started joking. I resolved to abandon all attempts to get the
> teenagers to plan the map before doing it. The map developed
> in a wonderfully haphazard way. First the river, then bridges,
> highways, streams, mountains, residential roads, pictures, etc.
> The two biggest houses of all were chosen for the ideal home

(one is a game house). Adult and teenage neighborhoods were
separated. All in all the map is an expressive, colorful
and valid representation of their feelings. Just as impor-
tant, it was fun to do." (SPA for black teenage boys)

The "assignments" of Ecologue ended on an upbeat!

SESSION NINE

Many participants remember the Open House as the high point of their

Ecologue experience. The day was a sunny Sunday afternoon in February

and a spirited two-hour cleanup had transformed the cluttered workspace

into a neighborhood jewel-box. Windows had been washed, new heights were

achieved in the home-baking that was set out, CPA's dickered lightheartedly

over prime wall space for their group's work. The effect was euphoric:

walls and display panels papered with brightly-colored ideal neighborhoods,

lists and turf maps. Passers-by, on their way home from Sunday services,

stopped in to survey the beehive of color and action.

Participants began to filter in shortly after two. Mothers brought

children and, often, husbands; others brought relatives or friends. It

was an opportunity to meet participants in another context, as part of

their families or social circle, and conversations shifted back and forth

from the program to outside interests. Everyone was jovial. Laughter

and banter accompanied the procession around the room to survey the work

of others. Items on the drawings became curiosity-pieces: "What? Separate

neighborhoods for teens and adults?", "A big sun in the middle? Are you

kidding? With our smog?" A number of new people wandered in off the

street and joined the group; the event had an openness about it. Parti-

cipants who thought the "real action" was in getting to know their neighbors, making friends and seeing what they could agree on, were in their element.

Only one piece of formal business was to be transacted at the Open House. Each group was asked to name three others whose proposals were most like theirs, and three groups whose work they considered most dissimilar. In making these judgements, participants tended to rely upon the documents in which they had personally invested most time and energy: groups who had locked into the "listing" tasks compared their lists to others; groups who had gone to great lengths on their ideal neighborhoods focused on their counterparts' drawings. As one participant described it, "Our group went mostly by ideal maps...I looked for some things first: the riverfront, the amount of trees, the kind of stores. I tended to pick up strong visual cues, like the fish in this map." Sometimes comparisons led to new ideas for things to include; one participant was observed penciling-in proposals on her group's ideal map.

An analysis of the choices made about groups whose proposals were most similar and most dissimilar is revealing. Of the sixteen groups who participating in the rating, three were considered the most similar by five or more groups:

      Freyas - 5 white teenage girls (chosen by 6 groups)
      The Challengers - 5 black 30-year-old men and women (5)
      Las Dedos - 4 elderly white men and women (5)

Those considered most dissimilar were:

Teenage Boys - 5 black teenage boys (chosen by 11 other groups)

The Clapp Group - 4 members of a white extended family (5)

Hastings Square - 5 white college age men and women (5)

These results were not entirely expected. The Challengers insisted through-out the process that they were different, that their goals were not shared by others, yet their proposals found a high degree of commonality. The fact that the black teenage boys easily outdistanced everyone else in the dissimilarity poll came as some surprise to them, and may partly stem from their proposal that adults and teens be segregated in separate neighborhoods. They got their point across!

The degree of reciprocity of the ratings is also interesting. Of the 45 similarity pairs, only 11 were reciprocal; that is, there was mutual agreement by two groups that their proposals were most similar in only one-quarter of the cases. Agreement on dissimilarity was almost equally low: 12 of 45 choices were recriprocated. One reasonable inference is the need for considerable discussion before groups completely understood the ways that their ideas were alike or different from others. While this analysis was not done at the time of the Open House, the timetable did call for such sessions.

About the only discomfort felt at the meeting was among a few of the Planning Aides. Some were startled to find themselves unwittingly advoca-ting their groups' proposals. Others, who by now had become taskmasters, worried that their groups might leave without completing their assignment:

"I found being a CPA difficult at the Open House. Real learning and relating experience was supposed to be happening and a serious task (picking groups to meet with) was to be accomplished, but the session was designed as a celebration. I find it difficult to blend the two, although I consider it highly useful to do so. My sense of celebration was undermined by the presence of undone tasks and vice-versa, and I ended up switching awkwardly between the two roles. I knew several participants well and could have easily talked for long periods with them, but I felt the need to keep checking back with [group 1] and [group 2]." (SPA)

Most participants did stay till the end of the afternoon. The Open House was a vote in favor of the following formula for staging a successful neighborhood event:

- Publicize it well and hold it in a highly visible place.

- Encourage people to bring families and friends.

- Have something on display that was done by many who are in attendance--it provides an _entre_ for conversation and self-introduction

- Keep people on their feet.

- Provide good home baking and something to drink.

- Encourage people to circulate.

- Pray for a sunny day in the winter.

V

A digression seems appropriate. My process notes remind me to explore an alternate explanation for many of Ecologue's occurrences to date. They ask: "What effects are racial politics having on all this?"

In any process which involves a subtle blending of personality and structure, it is difficult to disentangle motivations. The events can't be stopped, as in a play, and rerun with roles exchanged, to explore how

it might have developed differently. Racial issues did appear to lurk

below the surface in many of the episodes I have related. Indeed, the

same conflicts were at the root of many of Cambridgeport's tensions.

Earlier, I described the problems of a Planning Aide in dealing with

an all-black group who resisted formal leadership. She was blond (one

strike), white (two strikes) and a student (three), the epitome of what

they were not. Later she confided:

> "[Male participant] refused to do all the tasks. He partici-
> pated in discussions as long as he had control over the discus-
> sions, as long as he had control over how they were structured,
> but resisted discussions that were structured by us--for exam-
> ple, the attempt to discuss differences and similarities among
> people bombed. Several times he explained that what he was
> trying to do in the program was 'open the eyes' of people like
> me...I think it would be very difficult to get this group to
> accept the mapping and photo tasks, as interesting as they may
> be to us, and as useful for certain kinds of groups...Further-
> more, the assumption of this methodology that people should
> learn to bargain and resolve conflict, and become aware and
> respectful of the other guy's position, is an assumption that
> goes down better with some people than others. This group felt
> particularly strongly that they belonged to a 'disadvantaged'
> and, as they said, 'expendable' part of the community--blacks.
> For people like us to recommend that they learn to cooperate
> or bargain or in any way mitigate their anger is very tricky.
> The moments of most consensus and optimism in this group came
> when a member of the group itself was able to point out the
> virtues of getting together and the waste of plain anger and
> cynicism. This is not only a practical problem, but also an
> ethical one. There were times when I felt that I did not have
> the right to tell people how to 'organize to achieve their
> goals'".

The student's CPA partner was, not incidentally, a middle-aged black woman,

a community stalwart, who was to prove the only person able to intervene

to prevent violence at the blowup I have described. But this simply added

a second dimension--young blacks breaking at the bonds of a matriarchical

society. A second Student Planning Aide, with a male black CPA counter-

part (CPA 'C'), also confessed to frustrations and described how he came

to terms with them:

> "All the participants, at first, thought the program as 'jive.'
> They were in it because of the money, [CPA 'C'] was a long-time
> friend, and because they saw nothing else doing anything or
> even listening to them. It was also a 'cover'--to be involved
> in something legitimate and be able to say that to whomever
> they had to...The incredible frustration of getting the group
> together, in one place and at one time led [CPA 'C'] to the
> depths of pessimism more than once. Both of us felt that if
> Ecologue couldn't work for [participant] and his group, then it
> wasn't worth much. So we prevailed. Also, and very importantly,
> when we began to see [participant] and the group simply as
> people we wanted to work with, instead of as a 'do-or-die' test
> of Ecologue, we found our relationships with the group improving
> and the meetings easier to convene."

That CPA 'C' was a factor in attracting and holding this group in the pro-

gram was a credit to the strong belief of Ecologue's organizers that young

blacks who were often discounted should serve in both leadership and parti-

cipant roles. This viewpoint was implanted only with significant cost in

terms of the allegiance and patience of several white CPA's who measured

contribution in other ways.

Ecologue Tuesday planning sessions frequently became a microcosm of

the neighborhood confrontation over attitudes and behavior. There was a

constant process of testing for both racial and class bias:

WHITE CPA (questioning the neighborhood mapping exercise): This is going
to reflect just the tangible things like how the neighborhood
looks--where do the intangibles come in?

CARR: In the past, dealing with the tangibles first has made it
more comfortable to talk about what you value...

CPA 'C':   Hey! What do you say to the person who's talking about starving kids. He's not up to how the neighborhood looks...

WHITE CPA: The only thing you can do is referral.

CARR: You can only solve those on an individual basis. You can't solve all the problems at once. I'm interested in what we can do now to the neighborhood as-a-whole...

CPA 'C':   Look, I've got this guy who's an alcoholic who I've contacted who's so down and out he won't get involved. How do we get him in?

BLACK CPA: I agree with you. The issue is whether we are dealing with the right problems.

           [Various white Planning Aides attempt responses--"how about this?"]

CPA 'C':   (on his feet and leaning across the table) Hold on. Hold right on. You can overlay--talk above--talk around--talk below people and it all comes out the same. I know--I'm a little light con-player myself. This is all the same middle class white crap...

SEVERAL: What are you saying? I don't understand...

CPA 'C':   (disgusted, collapses into his seat) I'll be quiet. I'll be quiet.

Several of the white CPA's and students came to resent constantly being put on the spot always having to evidence "understanding", and what they though was grandstanding on the part of the young black CPA's. The fact that they kep their own time was a further source of irritation. In turn, the blacks viewed much of the dialogue, particularly in the planning sessions, as bureaucratic trivia and felt perfectly justified in moving in and out of it. They had their own agenda. They needed the program for the passport it gave them into the straight adult white world. They were uncertain about whether they could do what they were being asked to do,

but they wanted to set their own terms for the program so that they would have an escape in the case of failure, or would at least be able to discount the program if their terms were rejected. This may be another explanation for the confrontation over "pulling their load."

As a practical matter, no program that advertised itself as broadening the base of participation in Cambridgeport could escape dealing with the conflict in values and style of its black and white residents. That the views were surfaced and dealt with is to Ecologue's credit, and may distinguish it from other voluntary neighborhood organizations. The process was transformed, accordingly. Later, unlikely groups of both races were able to collaborate for significant work.

VI

After Session 9, it had been envisioned that Ecologue would shift gears, reorganize its structure, and begin an action-centered agenda. The debate over what to do with the final five paid sessions had first surfaced back in December when a planning sub-committee was established. Its work was complicated by the fact that there were actually two competing theories about how one organized to achieve neighborhood change. One argued that developing a skilled leadership core was the critical ingredient for success; the other view was to aim for broadening the numbers of people involved in seeking change until much of the neighborhood was involved. To follow the first approach suggested collapsing Ecologue's membership into a dedicated cadre who were willing to work towards elected office and

exert pressure for specific changes. The second approach implied multiplying the program through issue-centered groups, each of which would actively seek new members and run mini-Ecologue programs. Understandably, the latter tack was advocated by Ecologue's organizers.

At the first discussion of continuation sessions, the following dialogue occurred:

CAVELLINI: [A few of us] have been meeting to look at Sessions 10 to 15 and the paper you have outlines how they might go. What we want to know from you is how you feel about what happens beyond 15, so that we can plan 10-15.

CPA 'B':   I think that after 15 we're going to have to shift to asking "How are we going about doing it?" The 15 weeks will smoke people out, and get ideas on the table, but then we have to get people going on doing things.

SPA '1':   (member of planning group) The way we have it laid out, weeks 15 through 25 will be devoted to researching the issues the community has raised. In researching these we will also be working on getting more people in and the development of these people...

HERR: What is it your committee needs tonight?

SPA '1':   A commitment to go on through 10 more weeks to result in a program that's together...

HERR: I think that your hearing "Sure, depending on how it goes." I think there's a real question that can't be resolved tonight about how much you can pre-program the sessions beyond the 15th...

CPA 'D':   (uncomfortably) Let me ask you this: what would you like to see come out of the program?

SPA '1':   A developed sense of the whole community, with a sense of purpose, able to define issues and do its thing.

CPA 'D':   What I'd like to do is get a community that knows what it wants to do, and especially, <u>how to do it</u>.

CARR: I hope you will be concerned with how to go from 90 [people] to the whole neighborhood...

CPA 'D':   What do you think we are--psychologists. The only way to get anywhere is through politics, that's how other neighborhoods got what they wanted. There's got to be leaders come out of this...

CPA 'A':   I find this a little strange. My own feeling is that if we come out of the program with 8 or 10 people who are willing to be leaders, we'll have accomplished something. I've run campaigns with less than that...

Suspicion had it that among the "leaders" would be the names of the two CPA's proposing that strategy. The fact that it seemed a self-serving proposal did not aid their cause and later, the issue became bound up in the question of who would call the shots in decideing Ecologue activities.

An attempt was made to involve residents in planning the final five programmed sessions, but this failed because residents generally had neither the time nor the inclinationto endlessly discuss the details of sessions. Students and staff could win any point by outlasting those that differed. But the rift in perceptions remained, and the proposal to conduct a game in Session 12 brought it to a head. Phil Dowds had invented an ingenius, if complicated, game which would involve participants in rolling dice, bartering chips as tokens, and generally seeking support for goals (from the lists of Session 6) in exchange for reciprocal favors. The intention was to allow participants to "practice" forming coalitions, driving bargains, and reconciling differences. But several CPA's saw it as a parody--they were insulted by the notion of "playing games" when there were real issues to be tackled. The fame was introduced at a Tuesday meeting by trying it for a 10-minute period. Then:

CARR: What I saw was that if talkative middle-class people do what middle-class people do well around a table, it might work... I'd like to know how the groups which you know would respond to this?

CPA 'A': I would choose not to play the game myself.

CPA: I don't care for the game. I don't think it's the way I'd do it. I'm not sure what I'd do.

[Others agree, a few disagree.]

CPA 'A': Why not go to a real situation...What's your assumption? That people are completely ill-equipped to do these things in real life?

CARR: I have the feeling, I think that people can know a lot about how to wheel and deal but don't apply it to community organization. So to the extent that it focuses on coalitions it's O.K. But what I'm concerned with is that people have given us the benefit of the doubt up to now that this is going to lead to something, and that's behind them now, and they feel they're on the way. And to introduce the game now would destroy that sense.

CPA 'A': That's how I feel. People who are respected among community people are not the ones who are constantly wheeling and dealing. This thing turns me off cold. I don't think we're involved in a game here now...

CPA: I'd like to use the game in some way that's cut and dried—so we can cut to the heart of issues and find out who's really going to make the commitment to get things done...

There was no resolution that all could support. The committee was sent back to the drawing board to modify the game to take it out of the Monopoly league, and it was decided to add a discussion afterwards about the realism of the results. The CPA's who had urged the "leadership strategy" now pinned their hopes on Session 13, the final all-participant meeting, to coalesce the group into action. The final design for Sessions 10 through 14, and activities beyond, is outlined on the following page. The narrative resumes following the Open House:

OUTLINE OF THE ACTION-DIRECTED ACTIVITIES OF ECOLOGUE (SESSIONS 10-14 AND BEYOND)

SESSION	ACTIVITIES	AIM OF ACTIVITIES
10 and 11	Inter-group meetings with pairs of groups--with another whose proposals were judged most similar, then with another whose proposals were most dissimilar. Discussion of basis for similarities, areas where collective action was possible.	Opportunity to confront differing views of what should happen to Cambridgeport. First probing of areas where there was agreement that action should be directed.
12	Four or five groups meet to participate in gaming session, attempting to "sell" their priorities to others. The game focuses on and rewards trade-offs, coalitions and collective agreement. Discussion afterward of realism of game.	Practice at reconciling differences, bargaining, approaching others for support. Discovering which goal clusters would receive most widespread support. Set low pressure tone for beginning of collective action.
13	Mass meeting of all participants to decide upon organizational form and action committees for high-priority goals.	Organize for post-program activities. Identify members for working committees. Resolve outreach question.
14	Small group wrap-up sessions to evaluate the program, discuss individual commitments to action and socialize.	Debriefing to obtain suggestion on methodological revisions. Provide a final opportunity for groups to meet and discuss personal future agendum.
	Council of Delegates meets weekly to serve as steering committee, compare notes on progress of action committees, allocate remaining funds, plan joint activities.	Build an infra-structure for committee activities, provide a forum for plans, discuss relationships with other local groups and make approaches to them, maintain the Ecologue network.
	Open House for all neighborhood, booths for each committee to solicit members, socialization	Expand number of participants, get feedback on perceptions and plans, demonstrate that Ecologue is active beyond paid sessions.

SESSIONS 10 AND 11

    The intergroup meetings in Sessions 10 and 11 were markedly different than any of the prior sessions of Ecologue. Although no one had said to participants: "The ball is in your court," there seemed to be an understanding that it was time to decide exactly what they wanted to work on, and to which others they could look for help. Perhaps because four of them were generally present at a session, CPA's seemingly felt less responsibility to lead the discussions. Liberated, they could plead their own causes --they too had to decide what to work on, their privileged position would shortly end. This was the first time that CPA's and participants appeared in parallel roles.

    While most sessions began with a review of group drawings and goals, they quickly moved into a series of probes about what people around the table felt was important. Skipping lightly from topic to topic, at least one or two ideas usually emerged as deserving the program's further energies. A meeting of two young adult groups was, as Steve Carr described it, "like striking two matches together--they really got into it." He reported, "They want to do things now, not wait around for the workshops. They want to start a newsletter, plan a summer festival, get started on organizing a cooperative restaurant." The combined group set an initial meeting time for these activities before breaking up.

    Among other groups, the discussion was lower-keyed and aimed at building trust. Of one meeting between black teenagers and black middle-aged women, the SPA recounted:

"...One mother took unequivocal stands, as pro-teenager as she could make them. She insisted again and again, at the least dissatisfaction with existing facilities, that the teenagers deserved a new center with varying activities on their own turf. The teenagers were pleased by this strong support, I think, though such a center had become a low priority. Fixing up Al-berico Park was endorsed by all present..., vacant lots and buildings were scored by all sides...A health center was the clearest goal of the [adult] group discussed, and the teenagers, especially [participant], offered direct support by confirming how bad the ambulance service is and how far the hospital is. I had the feeling a genuine 'coalition and trade-off' process was ancipient and said so at the time."

The Planning Aide expressed disappointment, however, that the discussion did not deal with the main social issues that separated the groups-- teenager-adult conflicts. The second intergroup meeting of these teenagers, this time with a group of young college-age whites, focused almost exclusively on such issues. His report:

"...[One woman's] negative reactions to the older teenagers' idea of removing lights from the park--for privacy--touched off a discussion about crime, muggings, a woman's fears, etc. The woman valiantly defended the legitimacy of her fears and solutions, including more lights and cooperation. The teenagers admitted her fears were justified...but advised her to accept them as part of life. Their advice was given half in jest, along with assertions that they would not come to her aid were she in trouble. The discussion continued on this half-serious plane, but it was lively and gradually broke some of the teen's mocking..."

For Planning Aides, who had restrained themselves to this point and had sought to draw out their groups' ideas, these meetings were a first opportunity to get reactions on what they thought should happen. One white CPA pumped his proposal of homeownership for the poor, through converting existing public housing to cooperatives. The participants were skeptical, with one black insisting, "All public housing is designed for control--in

case of trouble, you can control them with a minimum number of troops."

This sparked a lively discussion with both admitting that the other "just

might have a point."

Overall, the intergroup meetings reinforced optimism that there were

at least a substantial number of participants who were willing to carry on

beyond the program. That again raised the question of the kind of organi-

zation that should be formed to guide activities. The Tuesday planning

meeting centered on this issue:

CPA: I think from now on we're going to have to concentrate on mass
       meetings.

CPA: Do you have any objection to steering people over to CRU, which is
       an organization that is going to stay in the neighborhood?

CARR: We ought to now get together.

CPA: CRU is going to elect members at their next meeting. Maybe we
       should get participants to join, or at least get together with them
       and talk about joining forces...I'm worried that Ecologue is going
       to simply peter out.

Everyone agreed that the time was ripe for approaches to other organizations

and a group was delegated to explore this further.

SESSION 12

The game had a new thrust and a new name: "GAG"--"Get a Grant." That

usually provided a decent opening line and, after a carefully-worded intro-

duction by Phil Dowds (trying hard to skirt the line of whether it was rea-

listic or not), teams swung into action, not quite sure of what it was all

about, but willing to give it a try. Four groups were present at each ses-

sion. They began by condensing their goal list into a small set that they hoped were saleable to the larger body. Then, aided by a playing board where results were posted, one person from each group made his rounds to the other delegates, probing for agreement, somewhat embarrassedly wheeling and dealing, and trying to marshall enough support to "get a grant." "Getting a grant" meant cooperating on enough issues to win bonus points. After 12 or 20 minutes, time was called and the floor opened to discussion. Thereafter, a second round followed and, if stamina remained, a third.

To the relief of Planning Aides who had come expecting disaster, most participants went along with the game, although the looks on several faces revealed more curiosity than confidence in the results. One CPA later reported, "I think the more they got into it, the more they liked it. At first they said 'forget it, I can go home and play a game.'" How well the game went seemed related also to how much confidence those running it projected, and this grew with each session. The game's most persistent critic was forced to confess, "The first night it was really a nip and tuck affair, but Saturday [the final session] was good. I think you are right, they didn't think of it as a game."

Out of the game came lists of, presumably, high priority goals, although some strange categories emerged because a flaw in the game rewarded those who could combine goals under a single umbrella, regardless of how well they fit. Thus, many lists were headed by labels like "housing", "environment", "family life center"--terms uncomfortably familiar to veteran proposal-writers. Yet several very specific proposals survived, including a request for a traffic light at a particular intersection near where sev-

eral of the participants lived. The proposal had been the main topic of that group's discussions from nearly the outset of Ecologue, and they were apparently able to convey its importance to others. Their Planning Aide was also relieved--perhaps other listening posts could be found for their obsession.

SESSION 13

This was it--the final chance to get all Ecologue participants together before the funds ran out. Many Planning Aides viewed it as the last stand and decisions about how to organize the session raised every issue that had been left dangling. Who should be invited? Other organizations? Politicians? Who should lead the meeting? Should a formal Ecologue organization be proposed at the meeting? Should committees be suggested at the outset or left to emerge from the discussion? What should be the tone? Should the work done to date be emphasized or downplayed? Virtually every staff member and Planning Aide had, by now, a set of personal theories about how to proceed. The Tuesday planning session made it clear they did not fit:

CPA 'A':   Personally, I've asked myself what I've got out of this program and I find very little for myself. I mean, I feel I got very little out of college too, so you can make what you want of it. But I'm 49 years old, I've written for newspapers, I'm trying to ask myself what's worth doing for the neighborhood...I think we've got to face up to what we've got. My own feeling is that if you wind up with 15 people out of the 80 who are really enthusiastic you're doing well...Do you think we'll get 15?

CPA: Yah, I think we'll get 15 out of this; I think you'll get more than that.

CPA 'A':   I'm talking about 1961. We had a campaign to repeal the [form of city charter] with 15 people for the whole city. We came within 50 votes of doing it. That's the whole city—not one neighborhood...

SPA: I hear you saying we should form an organization. What should we do?

CPA 'A':   Other than say, cut the bullshit, I don't know...Maybe we should join or take over CRU. It might be a lot better than continuing along this line. They're going to the heart of the matter, not concerned with process...We need action, not bullshit.

CAVELLINI: What I'm saying is I can predict how many will drop out, but I won't because I want to do a little more to see how many of them we can keep...

CPA: The innuendo is that Ecologue will come out with an organization that's a third force in the neighborhood...

CAVELLINI: I don't have an organization in my hip pocket...How about bringing outside people from other organizations into our next Open House to show them what the organizations are doing?

CPA: The city council members would like us to be divided into three groups—then they wouldn't have to deal with any of us...

SPA: What you're saying is Ecologue could go in and take over CRU and we'd have our own organization...

The debate continued around in broad circles. Many, in their hearts, wanted an organization to emerge—it would represent, at least, some testimonial to the energy they had invested—but they also knew it would further fragment the community. Several, including the staff, wanted to emphasize the work done to date, but they worried about whether that was the best platform on which to launch an action program. As Steve Carr put it, "There's a tendency to downgrade the maps by saying, 'All that busywork is behind us, now we're onto the real thing.' Yet there's a lot on them."

Residents around the table thought that it should be a long-term resident, not staff or students, who chaired the meeting and urged the participants to act, but they were concerned over possibly projecting the image that the program had been a foil for personal ambitions of particular CPA's. One remarked, "If I do it, the people from CRU will say: 'There he goes—he's running for State Rep again.'"

They wanted desperately to come out of the meeting with a series of working committees and most had a fairly clear idea of the issues around which they should be organized, but they worried about this being a break from unwritten Rule 1, that the participants should decide how to organize themselves. Coaching responses from the audience was even briefly entertained: "I think it would be clearly irresponsible not to resolve what responses we'll get. Call it 'plants' if you want—I don't think you just throw it to chance." All of this reminded one of a mother's response to her son leaving home for college: "Who will press his shirts and get him up in the morning? I shouldn't be worrying about things like that—he can make it on his own. But, Oh God! it's so hard to see him go."

In the end, the only way decisions could be made was by default and delegation. A committee of three would decide on who would lead the meeting. They would have the drawings on slides to be flashed on a screen near the door and the goal lists around the room, but not dwell on them. They would offer the option of forming an organization, but provide additional options too. Other groups would be invited, but not politicians. Even the climate equivocated: a March snowstorm wiped out the Sunday Open House and it had to be rescheduled for Tuesday evening.

With about three-quarters of Ecologue participants in attendance, the meeting began with a brief recital of the history of the program and a listing of the goals which received the most votes in the four runs of the Game. A CPA spurred the discussion with an evangelistic speech spiced with comments like, "We're coming down to the wire," "We've got to decide tonight who's going to work on what," and it was quickly joined by others: "Some of these goals should go to City Hall now," "It seems to me people should just speak up and say what they're interested in working on." One participant (who had never spoken before at a public meeting) telescoped the discussion: "First, I think we should find out how many are interested in continuing. Second, I think we need some short-term goals and a list of long-term goals. The short term ones we can on to and get through quickly." The idea of further workshops came under early fire:

CPA: I personally question the small workshop groups...I question
        whether they'll get anything done...

PARTICIPANT: What I'm saying is this: "If you break into small groups
        you never get anywhere. Next thing you know, one group is
        going in asking for this, another wants that, and they [the
        City] say, hey, there are too many groups--I'm not doing any-
        thing."

A straw vote on how many planned to continue found only a handful of defectors, but the meeting was no close to deciding how to harness the energies. Several worried about the lack of focus:

PARTICIPANT: It's getting confusing--I go to CRU and I must be on three
        separate housing committees. I think we've got a crisis on
        housing and that we ought to work on it together.

CPA: I think there's one common issue that everyone is thinking about and that's Simplex. We could have the skating rinks mentioned earlier and everything down there. I think this is one project we could all get together on...I don't say we could solve all our problems down there, but we might get a skating rink, we might get some housing for students to take the pressure off the neighborhood. Now how do we get it together?

PARTICIPANT: Some people might want to work on Simplex. You don't have to disagree on Simplex to want to work on something else. I would like to start a newsletter...

CPA: I have no qualms about a newsletter if you want to work on it. But this Simplex issue is really hot. Once they get the zoning approved we're really dead...I want to get into my other thought. There's no reason why we can't get together tonight and set up committees...Is there anyone here that wants to work on transportation? [A few nods] On police protection? [Others nod]...

CARR: I don't think we ought to force people into groups. I think people should think about that before committing themselves...

CPA: Well, I just think they ought to have thought about that by now...

The meeting was getting nowhere, or at least if it was headed somewhere, most participants had lost patience with its pace. The most active spot in the room became the coffee area; there participants were engaged in what they had learned to do best—discuss face-to-face issues they thought were critical. No consensus emerged about an organization, but a few groups did form, informally, around proposals. The first signs of split had appeared: one group that seemed captivated by organizational questions, the relationship with other neighborhood groups, and outreach efforts; a second group that couldn't abide the detail and simply wanted to get on with what they saw as the job, making something tangible happen.

SESSION 14

The final paid Ecologue session had three objectives: to evaluate informally the program; to get a better fix on what issue areas people would like to continue working on; and to probe attitudes about what organizational arrangements should be made. For most groups, the meeting was perfunctory. Disappointments were aired, talk centerd around how the program might have been better organized, there was reminiscence about the good times they had had. The organizational question remained baffling; participants were about evenly divided between forming some loose affiliation of committees and seeking rapproachment or merger with existing neighborhood groups.

Suggestions for over a dozen issue-centered groups were reported in the CPA debriefing session for Session 14. They were: Simplex; Parks and Recreation; Neighborhood Services; Housing; Neighborhood Organization Steering Group; Public Relations and Information; Public Safety; Drugs; Day Care; Health; Education; Local Enterprises; and Economic Development. There was some dissatisfaction with the list, both in terms of its length and its failure to relate clearly to past work. Steve Carr noted, "Right now I'm getting alienated from this list because I'm feeling I could have come up with it three years ago. In fact I probably did."

But the committee names didn't tell the full story of Ecologue. Several of the groups were already active on more specific things. Despite their exaggerated label, "Public Relations and Information," a small core of people were busily trying to get out the first issue of a neighborhood

newsletter. The drugs group was working on specific changes to a City-wide funding proposal. "Parks and Recreation" really referred to an unlikely group of elderly, mothers and teens who were planning the first of several cleanup campaigns for vacant lots, to transform them into neighborhood play spaces. The Public Safety group had already set up a meeting with City officials to seek the long-talked-about stoplight.

Thus, the funded Ecologue program had ended, with many loose ends, some hopes, some disappointments, and a broad agenda for what needed to be done. More than anything else, perhaps, there was the feeling among staff, students and CPA's that they had learned a great deal. "I don't know that I can put into words what I have gained personally. I feel that because of this experience I'm a lot 'richer' personally," wrote one CPA. Others repeated the theme: "I have gained insight into people from areas I never knew before"; "It offered me the opportunity to come in contact with people that I ordinarily never would have been involved with, particularly the Black element". The students stressed other kinds of learning: "I've come to realize...that petty problems which look so easily solved really are too numerous and deep-rooted to be solved right away"; "I have learned to listen better, learned not to underestimate on the basis of superficial judgement, and to trust more to other people's understanding of where they are and what they want in the long run." Asked what he had learned, Bill Cavellini put it simply, "A WHOLE LOT--probably more than they learned from me."

And as Ecologue ended, most of the students, CPA's and staff were also aware that the real test would come in six months, or a year, or more, when it was evident whether any of the proposals had become realities.

VII

At first they returned to the Ecologue headquarters out of habit—staff, students, former CPA's, residents, and a few new faces—what would Tuesdays be like without a meeting? At an all-participants meeting held a few weeks later to finally nail down the question of whether or not to form an organization, the decision was to form a steering committee—a "Council of Delegates" with representatives from each of the working committees—which would meet regularly and serve as a clearing house for planned activities and would disburse the modest remaining program funds. The meeting was sparsely attended (only 20 participants). Some attributed this to the fact that it was St. Patricks Day and the first beautiful spring afternoon, but it was also clear that many of the participants were catching their breath before going on. There seemed to be plenty of interest in committee work and after some re-formulation eleven committees were actively making plans for the neighborhood.

An Open House was held late in April at which each of the committees had a booth with a representative who was prepared to explain their plans and sign up new members. The meeting was well publicized through the first issue of the neighborhood newspaper and many new faces appeared

including two city councillors and one School committeeman. After this

meeting, the committee membership rolls read:

    Better Education - 8 members

    Community-University Relations - 6 members

    Day Care - 13 members

    Health and Drug Abuse - 11 members

    Housing - 14 members

    Jobs - 9 members

    Neighborhood Organization - 12 members

    Neighborhood Services - 6 members

    Newsletter - 10 members

    Parks and Vacant Lots - 21 members

    Simplex - 22 members

The numbers, however, are somewhat deceptive, since many persons were

active in several committees. Viewed in terms of actual numbers of people,

the following chart summarizes participation through the spring:

TABLE 5: Ecologue Results

POST-PROGRAM PARTICIPATION

	Pre-Completion Enrollment (March)	Initial Committee Sign-up (March26)	Pre Open-House Sign-up (Apr26)	Post-Open-House Sign-up (May)	Start of Summer (est.) (late June)
ECOLOGUE STAFF	4	4	4	4	3
CPA's	10	7	8	8	6
SPA's	8	6	5	5	3
RESIDENT PARTICIPANTS	62	39	32	33	13
NEW RESIDENTS	--	3	5	27	6
NEW STUDENTS	—	2	2	2	--
TOTAL	84	61	56	79	31

Tuesday-night meetings continued through the spring and occurred occasionally through the summer months. The Council of Delegates continued to deal with the intractable issues of organizational relationships, and the discussions were as frustrating as before. Discussions drifted from week to week. Even a minor issue like allocating $50.00 for the newsletter took a full meeting to be resolved (almost at the price of its staff) when it became embroiled in questions of whether it should be the "official voice" of Ecologue--hence, the contents would need to be approved. The question of who should be able to vote on the allocation of funds prompted another marathon of pettiness. The attendance at Delegate's sessions declined and Steve Carr noted, "I think there's a big problem with the Ecologue process of residents not taking the responsibility of organizational work. We went on for months with responsibility being taken by staff and we have turned

a steep corner and are on to issues now, but things seem to be drifting off. I think people have reacted to the lack of organization and maybe some of that is because we've stopped doing the work."

But gradually, there was movement in three directions. By the end of the spring, discussions were underway with four other organizations (CRU, the Cambridgeport Planning Team, the Morse and Webster Community Schools) about forming a joint organization. By the end of the summer the relationship had been formalized and, later, they adopted the name "The Cambridgeport Alliance." A second move led to the creation of a Community Development Corporation, with a number of Ecologue people instrumental in its formation and several on its first Board. Finally, to the surprise of many, a number of Ecologue people ran successfully in the fall elections for offices on the Cambridgeport Planning Team (OEO-funded) and became a majority on that board.

The real activities of Ecologue, however, continued through its committees. The Parks and Vacant Lots Committee organized several highly visible cleanup campaigns for open spaces in the neighborhood and, with a strong assist from a Student Planning Aide who remained on as a community organizer, were able to press the city for badly-needed improvements to playgrounds. The Day Care Committee joined forces with the Webster Community School and were able to see the creation of a neighborhood facility in that location. The Drugs Committee was active in city-wide activities, sponsored a Cambridgeport "High on Drugs", and eventually were to see their mandate fulfilled through the creation of a Neighborhood Health Clinic. The Newsletter Committee, perhaps most successful of all,

has published monthly editions for almost two years and is still in business (self-supported). As other committees dwindled, some of their members have joined other neighborhood and city-wide groups to work on improvements.

On balance, the record of Ecologue participants is mixed. About one-year after the completion of the formal program, the membership could be characterized in three groups, based on a telephone survey and community leader's reports: approximately one-third are now more active in neighborhood affairs than they were previously; one-third have not had significant involvement since they completed Ecologue; one-third have either moved from the neighborhood, are deceased, or were unable to be accounted for. Finally, it should be noted that, since Ecologue ended, significant energies for neighborhood change have come from a number of students and staff who have made a permanent commitment to the area and now live there. Part of that commitment process may be traced to the program.

VIII

What does the experience of Ecologue say about the theories on which it was based? At the beginning of this chapter, I outlined five sets of beliefs which constituted the theoretical underpinnings of the project and what follows is an attempt to re-examine these in the light of the project. As in any evaluation of a process, the results are complicated by the fact that failure may be explained in at least two ways: either the theories were wrong and the methods of putting these to test demon-

strated this; or, alternatively, the tests were invalid or polluted by cir-
cumstance and one can say little about the theories as a result. The same
ambiguity is true of success. The distinction is important, but must be
drawn on a case-by-case basis. Most often, it is some combination of the
two explanations which makes the most sense.

1. Because Ecologue was viewed as a planning tool, rather than a
distributive mechanism, having a clear line to financial resources from
the outset was not considered a prerequisite for its success. In fact, as
predicted, it was responsible for mobilizing human resources that accom-
plished locally-significant projects and some activities begun then con-
tinue to be a force in the neighborhood. Yet these are small by compari-
son with the goals and ideals expressed by participants. Those hopes may
remain in participants' minds, but they have left no permanent imprint on
Cambridgeport, nor in the documents or minds of officials who will make
long-range decisions about the area. They remain to be inserted in ad hoc
ways, by opposing re-zoning petitions or pressing specific agencies for
shifts in policies--a fragile link to accomplishment.

In retrospect, an error may have been to think of resources too nar-
rowly. Ecologue may not have required financial resources, but the re-
sources of power, influence, and receptivity of officials were critical
if there was not money. On at least three occasions, ties of these kinds
were spurned: on the initial approach of the City to allow input to the
CRP and neighborhood recreation study; on Phil Herr's proposal to seek a
relationship with M.I.T. to enable a neighborhood plan for Simplex to be

be prepared; on a later occasion when approached by M.I.T. researchers doing a cost-benefit study of Simplex and asked about what factors the neighborhood felt most strongly about. In each case, the view was expressed that participants "were not far enough along" to provide an input, and the M.I.T. rejections were also based on outright mistrust of the institution. Stated differently, the methods were structured in a way that precluded the early spinoff of ideas and reactions to outside planning efforts.

A cynical view would hold that the CRP, neighborhood recreation plan and at least the second M.I.T. study were meaningless exercises anyway, so nothing was lost by not plugging into them. Yet it remains that no alternative avenues for incorporating Ecologue's products was found and whatever influence might have accrued through these relationships may have been better than none at all. And it is fair to conclude that some of the discomfort which Carr expressed near the end of the program (when he saw the expansive sets of goals disintegrate into ad hoc committees) might have been prevented by having ideas already begun to be incorporated into official plans.

The lack of a clear end point to the Ecologue process is one significant way that it differs from the participatory process described earlier at Chandler Village. In that case, there were few anxieties about effect—it went without saying that ideas would be incorporated into the design program. While the Ecologue process was a slow pattern of eroding enthusiasm, at Chandler energy actually built up to its com-

pletion. Of course, the Chandler process was also much shorter. But its participants felt they had accomplished something tangible (regardless of how their ideas fared in the later design process) while many Ecologue participants left feeling hollow. It's important that a graceful terminus --death, if you wish--be just as much a part of a process design as a firm beginning.

How could the Ecologue methods have been restructured to encourage greater spinoff? One possibility would have been to have designed the program so some members began working immediately on near-term decisions, while others continued with the more general activities planned. Certainly there were participants who would have preferred that level of concreteness earlier. Having wrestled with these decisions and found out how ungrounded their proposals were, they may have seen the value in learning more and becoming immersed in long-range goals. The danger--recognized by the leaders--is that a split between "now" people and "creamers" might have been fatal to any collaboration. Alternatively, or perhaps even at the same time as initiating projects, better arrangements should have been made with M.I.T. and the City so that key parts of their plans were deferred until the time was right for inputs, according to Ecologue's schedule. Having a format which was broad, but specific, such as the CRP or a Simplex development plan would have lent urgency and purpose to the final five sessions and the post-program activity.

2. Understanding self-interest and how it differed from others', it was reasoned, was the critical requisite for collaborative action. For

this reason, the early stages of the Ecologue project were devoted to a variety of comparative analyses to reveal differences and impress reasons for their existence.

Most participants looked upon this stage of the process as interesting and useful, <u>albeit</u> too lengthy. But the attempt at self-interest analysis met a variety of responses, some of which must call into question the theory. Some participants believed they knew what their self-interest was as, for example, the group of blacks who saw their role essentially that of impressing upon others that they were worthy of respect. The process was seen as redundant to what they already gone through personally; as their Planning Aide put it, "They perceived, and they may be right, that they benefit the program more than it benefits them..." The issue was not simply the discomfort (although real) of having to cajole the group to undertake tasks that they understood the meaning of, but thought were superfluous, but also the ethical question of what right the intervenor has to prescribe a way of seeing themselves.

A second kind of response which at least complicates the theory is that many participants were unable to separate the objects of their self-interest from those of others. An example is the case cited, where an unmarried working woman wants the things wanted by her married friend with children, not because they have any intrinsic meaning to her, but because she values the friendship and hence values the friend's values. Thus, in a closely intertwined neighborhood, self-interest really becomes a chain of self-interest, not an easily-identified pattern of objects bounded by experience.

A third response was the great resistance encountered in having participants surface differences. Many believed—perhaps mistakenly, but believed nonetheless—that the way to form and maintain friendships was to focus on mutual interests, putting aside or accepting differences. Since Ecologue was a social mechanism, they resisted greatly anything which might be read as a confrontation of values. At the opposite extreme, particularly among teenage groups, were participants bound up in probing what they valued in terms of their "significant others," and they were not yet prepared to take a stand on where they were at. Thus, their analyses became symbolic or real challenges to adults: how would a female Planning Aide react to a building labelled "Betty Boob's Ballroom" and shaped to reflect the same? how would parents react to the idea of a separate neighborhood for teens? how would a young woman react if I told her I wouldn't come to her aid if she were being raped?

These responses are troublesome. To the extent that Ecologue's methods worked, it was important that one reveal inner feelings in ways that others could make comparisons. Perhaps that was enough, and curiosity should have been allowed to prevail where it would, without the aid of Planning Aides' prompting. Or possibly groups should have been structured with greater internal differences, so that collaboration at the first level would have required participants to face differences. Still, behind all these reactions is the conflict between, on the one hand, seeking a community that is "de-sanitized" of its stereotypes, and, on the other, wanting to respect the very human reactions of its members.

To choose the former, means shouldering the responsibility for intervention.

3. Ecologue, by design and action, sought participation that was broad, level, and based on views of the future rather than simply reactions to crises. Again, its theories ran foursquare in the face of the theories of its participants. The conflict over strategies for post-program activities demonstrated how deeply ingrained the notion of "leaders and followers" is in the minds of those seeking to make things happen. It also raises the issue of what a reasonable test of either of the two strategies might be.

Ecologue's organizers were clearly hampered by not having a sufficiently persuasive image of what an effective flat but broad-based organization might look like. Thus, participants were forced to fall back on what they knew—how other existing organizations and individuals that were successful worked and what gave them least the illusion of accomplishment. This is the price of breaking precedent, but some fault also must be laid to those who resisted organizational forms with inner and outer circles, while never making clear their objections to that pattern, or never really giving participants the choice. In explaining the defection of one participant who had run for office prior to joining, a planning aide speculated:

> "One final explanation, not supported by anything concrete, is that Ecologue worked too well. It stressed the need for traditional leaders to develop the ideas of non-leaders. Perhaps the process showed [participant] he wouldn't be able to have

the degree of direct influence he might have desired. At any
rate, he has become one of several non-young, politically ex-
perienced men Ecologue has lost. Nothing suggests he will
return."

Many of the decisions to defer liaisons with existing neighborhood

groups were rooted in basic differences over the best format for partici-

pation. But it must also be noted that these differences were recipro-

cated and a particular sore point was the issue of paying participants

for their work. Viewed from the other side, it was seen as a way of

unfairly buying the time of valuable community resources, and more than

one outsider wondered aloud whether much commitment existed if partici-

pants had to be paid to attend. The fact that Ecologue went along for

months without approaching existing organizations to talk about post-

program activities, and actually created parallel committees in the end,

was further grounds for suspicion that it was aimed at putting existing

organizations out of business. In turn, as I have noted, City personnel

felt they could not afford to officially sanction Ecologue as the

neighborhood spokesman, and instead spread their contact thinly across

all the groups.

The murky world of neighborhood politics is always fraught with

rivalry, but Ecologue unwittingly intensified this by being an experiment

in the midst of conventional action. But perhaps a better experiment

would have been to see whether existing organizations were susceptible

to change by the addition of a new process grafted onto what existed.

4. Part of Ecologue's justification was that planners ought to lay
bare their value-laden substantive knowledge and make ordinary residents
capable of the judgements normally appropriated by professionals. That
assumes that "expertise" consists of knowing in detail such things as how
much traffic can crowd its way along a street before it becomes congested,
or when a park is or is not needed based on population figures, or what
makes a street a pleasant place to be in, or what constitutes a decent
level of public services. The methods succeeded in broadening the base
for such decisions, but they also demonstrated that another form of know-
ing—about process itself—can be equally impermeable. All of the reasons
why substantive knowledge is frequently the captive of a few again pre-
vailed: no experience with precedents; too little time to experiment;
fragmentary understanding of theory. And the Ecologue staff found itself
caught in the dilemma of wishing for participation in formulating the pro-
cess design (not simply asking people to react to it) but found it impos-
sible because they were the only ones with the experience, theory, and
time to formulate proposals.

Part of the problem might have been avoided if all the Planning Aides
and staff had gone through the experience of trying the methods before being
faced with having to administer them to others. This is akin to the
psychiatrist undergoing a program of diagnosis before dealing with pa-
tients, or the architect serving as client before undertaking a commis-
ion; one cannot help to come away better informed about the effects of a
process. That suggests a participatory design which grows by ever-

expanding circles and which cycles through many iterations before it be-
comes widespread. It would undoubtedly change as new insights are added
by those who have "graduated." An obvious difficulty is that funding
sources, especially those who see themselves supporting experiments and
demonstrations, are unaccustomed to lengthy programs with no guarantee
that they will end up looking as they did at the start. Witness the
Office of Education's polite refusal to continue support for Ecologue.

5. Ecologue tended to confirm the importance of local socio-spatial
groups as the building block for local programming activities, although,
ironically, this occured at some expense to its other aims. Neighborhood
friendship groups proved a source of strength in promoting easy discussion
and agreement during the early stages of Ecologue but, as I have noted,
they also tended to duck differences, agreed too readily to the proposals
of natural leaders, and exerted too little pressure to attend or perform.
After the program, when individuals dropped out, others in their group
tended to do likewise. By reinforcing existing friendship patterns, the
friendships gained strength and, one speculates, the chances for collabor-
ation, except through coalition, diminished.

The dominant structural variables of Ecologue were stages in the life
cycle and race. A reasonable question is whether the transition to action
would have been easier if groups had been formed around the environments
they shared (such as by blocks or area), forcing differences in self-
interest to be confronted from the start in very concrete terms, rather

than only after views had been allowed to form in supportive surroundings. Only another experiment could provide the answer.

One final note: It is impossible to exaggerate the time, energy, patience and goodwill poured into the Ecologue project by its staff, students and resident planning aides. Whatever its shortcomings, the project had the chemistry to engender commitment, and the respect that follows from recognizing the contributions of others. Part of that must stem from the fact that it was built on a theoretical base and remained an engaging intellectual activity as well as a social drama. It is evidence of the power of reconciling personal and professional ideals.

FOOTNOTES: CHAPTER 9

1. This case study is based on a number of sources. I served as a participant observor throughout the process, taking extensive notes on events and interviewing outsiders as that seemed important. Stephen Meachem, a student group leader, kept a careful diary of his reactions during the course of the project, and these have been an invaluable source of "inside" perceptions. Philip Herr's summary of the project, Ecologue/Cambridgeport Project, Final Report, December 1972, was a useful recounting of the project in terms of what they set out to do. Documents generated for the project—grant requests, working materials, raw interview data, position statements—helped in reconstructing events. Evaluations of the program by Planning Aides and participants allowed me to use the benefit of their judgements in writing this summary. A telephone survey of all participants, which I did in the fall of 1973, provided insights on the activities of participants after the program. In the descriptions which follow, I quote extensively from these sources, but cite references only when they may be found in accessible documents or publications.

2. The term "Ecologue" was coined by Stephen Carr and Andrea Couzins from the Greek roots: ECO=house, LOGUE=talk; together, literally, "housetalk," which describes its origin in small friendship-based groups. Two earlier pilot studies—one among teenagers, the second involving a small group of Cambridgeport residents—had provided a test of the working tools, but there had been an attempt to extend these to a neighborhood as-a-whole.

CHAPTER 10: ENGAGING USERS IN PROGRAMMING

Providing a working model of user-clients, through scenarios or other forms of representation, may help to ground programmatic and later design decisions in an understanding of the probable reactions of users to the environment being created. But, for at least three reasons, it is often desirable to inject users directly into the process.

One reason is that the choices that user-clients might make are not always predictable from observed behavior, no matter how sensitively the programmer or researcher has attempted to assay their motivations and routines. The danger to avoid is "poured-in-place sociology"-- providing an environment which reflects what an outsider infers is valued only from what he observes. A common error in designing housing for low income people is to incorporate their observed routines directly into a new setting (e.g., providing stoops for neighboring), regardless of whether these represent ways of coping with sub-optimal environments (keeping out of a steamy apartment in summer, for example) or stem from deeper motivations.[1] As I have indicated in Chapter 5, often what users desire is best revealed through a dialogue which centers on the metaphors they use to describe their situations and ideals. Purely on informational grounds there is no adequate substitute for such face-to-face interaction.

A second reason is that users, when on the scene at the point of critical decisions, are less discountable than if remote and ephemeral. The result is to build in a measure of interpersonal accountability.

If the designer or programmer gets to know his clients as individuals, even friends, not statistics or stereotypes, he is less likely to dismiss objectives that are difficult to serve, less inclined to overlook details which may be important to particular users but are only a fragment of the broader issues being faced. And the presence of users may also work in the designer's favor: it is more difficult for the paying client to run roughshod over important issues of environmental quality if he must do so looking across the table at those who will be affected by this disregard.

Finally, the importance of involving users may be argued on value grounds. As Robert White has noted,[2] competence which flows from control over one's fate is an important prerequisite for maintaining self-identity. Control over environmental changes may be an important medium for exercising competence. We customarily place our lives in the hands of airline pilots or doctors because we trust them to deliver us safely (and because we have no choice but to trust them), but our everyday environments may not be so hazardous or mystifying to leave them to the designs of specialists. On the contrary, part of the reason for the widespread failure of public environments to support anything but the bare essentials of existence may be that they are too seldom thought of as being capable of personalization. An environmental programming process may have some impact on felt-competence if it allows users a degree of control over decisions (either through formal power or the right to persuade and be heard), if it informs users about the proces by which environmental decisions get made, or if it builds in directly suggestions made by users that they can later identify as their work. Designers and plan-

ners, after all, are at least partly drawn to the field by the satisfaction of building testimonials to their labors; we should not be surprised if users expect the same.

I

Even if the reasons for their involvement seem compelling, how to identify those to be involved and, even more basically, who to seek out remain difficult questions. Part of the problem is in what is meant by "the users." A simple-minded model divides the world into two classes: the "providers" or "paying-clients" and the "consumers" or "user-clients."[3] Thus, the occupants of a newly-completed highrise apartment are the "users," while the coterie of developers, financiers, builders and rental agents are the "providers." But situations are never that simple. What of the residents of the neighborhood who opposed the structure on the grounds that it would intrude into their quiet neighborhood--should they be involved in decisions? Or the janitors and superintendents--they too "use" the structure? Or the lower income people who cannot afford to live there now, but who might have been able to if a different package was agreed-upon? The circle can be extended ad infinitum, and at its edges one is forced to conclude that almost everyone is impacted in one way or another by any project. And that is not helpful; too many participatory projects have floundered or been sidetracked because they included too many people with marginal interests at stake and too few whose interests were central. How then is one to decide where to spend energies in reaching out to involve those centrally affected?

One approach is to begin with a typology of the ways in which different individuals and groups may be impacted by decisions about the environment. Any typology is an _ad_ _hoc_ creation, but in most environmental change projects, financial, programmatic and experiential impacts are obvious subdivisions. A project dealing with public spaces in a dense urban context may also involve significant political and social impacts. The rule for drawing the typology should be that each category be distinguishable from others in terms of requiring different ways of interacting with the affected parties.

Table 6 shows a typology of those impacted directly or indirectly by the project to design and build housing at Worcester State College (see Chapter 3). Based on a typology such as this, a strategy for outreach may be drawn and it will likely differ depending upon the type of impact. Those impacted financially will need to be a party to package decisions and will have to be consulted directly. The mechanism may, however, differ: a survey may provide the best benchmark of students' ability and willingness to pay for housing, while a working group of officials with sign-off responsibilities may be needed. Individuals and groups who will be affected through the programs they operate will need to be consulted about packages and patterns, and a second working group may be appropriate to begin planning for the shifts which will need to occur when the housing is opened. Finally, there are those who will actually experience the environments being designed; they will have a stake in the outcome of the full range of decisions--packages, patterns, and performance requirements. Since they are likely too numerous to be consulted exhaustively and since many are not yet on the

TABLE 6: IMPACT GROUPS - WORCESTER STATE COLLEGE HOUSING

BY TYPE OF IMPACT:

DIRECT

FINANCIAL	PROGRAMMATIC	EXPERIENTIAL
State College Building Authority State College Board Worcester College Financial Office Prospective Residents Bond-holders Stores and outlets near campus	College academic units Dean of Students Office (management) Campus food services Campus Physical Plant Department Campus Athletic, Library Departments Foreign Students Office College clubs and associations Churches nearby Campus police	Prospective residents now at college Future students who might be attracted to college Commuting students who wish to stay over Visitors to college

INDIRECT

FINANCIAL	PROGRAMMATIC	EXPERIENTIAL
Taxpayers Persons owning off-campus rental housing State Legislature Parents of students	Commuting students Parents of residents City building code officials	Commuting students Residents of houses bordering on college College faculty Students at other area colleges

scene, there is a need for a further breakdown which takes account of
each of the important subgroups in the "user" population so that repre-
sentatives of each may be heard. Those involved from each of the sub-
groups will become, in essence, surrogates for a larger number. Yet we
lack adequate theory to tell us the best way to break apart the popula-
tion to allow each group to voice its needs.

Although phrased in terms of research endeavors, Kenneth Craik pin-
points the gap in theory:

> How do the several million persons in the United States vary
> in their responsiveness to the molar physical environment?
> What order exists in this variation and how is it to be under-
> stood?
> In what way might architects, coporation presidents,
> janitors, Sierra Club members and opera singers differ in their
> descriptions of a Manhattan subway station? Would Democrats
> differ from Republicans, children from adults, or males from
> females? If observers were selected on the basis of their
> personality traits and dispositions, would extroverts differ
> from introverts or dominant persons from submissive? Would
> persons who differ in their motivation for achievement, or their
> cognitive complexity, or their level of anxiety also differ in
> their comprehension of the subway station?
> Eventually, the understanding of what a culturally or
> sociologically defined segment of the human population will be
> incomplete until its environmental dispositions have been as
> thoroughly delineated as its interpersonal styles and cognitive
> capacities. 4

This knowledge about environmental dispositions has important practical
consequences for involving in decisions those who will eventually ex-
perience an environment. Given limited resources (hence the ability
to involve only a small proportion of everyday users) and assuming the
desire to be exposed to as broad a set of dispositions as possible,
what indices provide the most assurance that a small group will accurately

reflect the larger population? Since every person differs in experience
and life circumstances, responses will at one level always be idiosyn-
cratic, but sociologists argue that reasonable generalizations can be
drawn based on life style, stage in the life cycle, social class and
value sets.[5] But what are the best predictors of such differences: age?
marital status? group membership? past environmental experience? socio-
economic status? race? sex? home ownership? And, if only a few may be
chosen, what are the critical combinations? Knowledge of these factors
would help, not only in selecting surrogate users, but also in extrapo-
lating and weighing individual responses to reflect the broader user-
population.

II

A careful analysis of the environmental preferences of those in-
volved in the Ecologue program offers some insight into the best predic-
tors of group differences. (See Appendix III for details.) At issue was
the shape of future plans for the residential neighborhood in which par-
ticipants lived. Since the selection of participants was as nearly ran-
dom as possible, and ranged across all important segments of the neigh-
borhood, the resulting differences in preferences can reasonably be
assumed to mirror the differences among the larger population.

The analysis revealed:

1. Social class -- roughly, a combination of income, education
and occupation -- appears to be the most important variable for explaining
differences in people's environmental preferences for their local neigh-

borhood. This was most evident in comparing what people considered to be an ideal environment; even while there was a higher degree of agreement on what constituted the good and bad features of the neighborhood they now inhabited. Class tends to exert a powerful influence upon expectations, and therefore cannot be neglected in considering who to involve in an outreach process.

2. Stage in the life cycle was a close second in its correlation with differences in the environmental preferences people expressed. Because it is reflective of different patterns of use of a local neighborhood, greater differences in opinion about the advantages and disadvantages of the current setting were evident along this dimension. When combined with social class, important polarities emerged in the viewpoints about what Cambridgeport should become.

3. A third variable which appeared to characterize some of the differences in environmental attitudes was race. Although less pervasive than the previous two dimensions, a typology of important groups to be consulted should include this variable.

4. On the other hand, several variables--notably sex, home owner- ˙ ship status, and length of residence in the neighborhood--seemed to bear little, if any, systematic relationship to environmental preferences. They could be left to random selection.

5. Finally, it is important to note that even within homogeneous groups, many shades of opinion existed about what the neighborhood should

become. Some of this can be attributed to group dynamics which subtly influenced what people felt was important. But in a larger sense, it simply confirms the fact that people draw on many sources from their experience in developing viewpoints about an ideal world. It argues for having large enough numbers involved in a participatory process to avoid stereotyping that may be inappropriate.

While the evidence of the Ecologue project provides some guidance about who should be sought if everyday users are to be involved in a programming project, clearly, it is only one case. The data is sewn with questions, and we would wish more repetitions of the experiment before making confident generalizations. It is particularly important to probe the differences in normative views between environments which are inhabited routinely (e.g., neighborhoods) and those used only occasionally (e.g., a public building or park). Yet one case plus common sense is better than none and, at the risk of extravagant over-generalization, it is worth the attempt to apply the conjectures to other situations.

Situation -- Programming the Pedestrianization of a Downtown Street

About 60 everyday users are to be sought to advise the designers on what facilities and qualities should dominate. There are several competing notions about who should be sought: choose people randomly, any sample is as good as another; seek a mixture of people who are there for different purposes--shoppers, workers, tourists, passers-through; choose people by social groups--class, life-cycle stages, race. What might be inferred from the Ecologue experience?

The response requires two inferences. One hinges around the question of whether any categorization is better than none, and, not incidentally, whether it's ever possible to draw a completely random small sample of a large area population. The factor of age differences was associated with 57 percent of the variance in norms (by one measure) in Cambridgeport; class variance was associated with only slightly less. A useful strategy might be to begin soliciting people randomly, then to check the sample against area-wide profiles along these two dimensions.

But that strategy rests on a second inference: that differences in desires for neighborhood change and for changes to a downtown street are comparable enough to allow the Ecologue findings to be transferred. A plausible theory (which avoids the question) might be that differences in trip purpose (shoppers versus workers versus those seeking entertainment) might be accounted for by distinctions in class and life cycle; that is, that they are highly correlated internally. By checking the accumulating list of those contacted, some light might be shed on this. The obvious problem is that downtown worker one day might be a shopper the next, just as this year's renter in an inner city neighborhood might be next year's homeowner. Fundamental values are not likely to shift in the process, and the conjecture that class and stage in the life cycle are likely to be the best predictor remains the best hunch.

Situation -- Programming a School in an Inner City Neighborhood

Here the issue is which parents (kids are accommodated through a separate process) to seek out for advice on the evolving program. The

programmers wish to go beyond the traditional networks of PTA and

vocal community leadership to those who are seldom heard.

The Ecologue experience seems readily transferable: account for

class differences, then race. If the school ranges across many years

(e.g., K-8) life cycle differences among parents of younger and older

kids may suggest efforts to involve both. In any case, the PTA roll

is unlikely to reflect the crucial differences, and programmers will

undoubtedly be forced to recruit many of the participants.

III

It is important to distinguish betwen "representatives" and "sur-

rogates," both of which may be involved in an outreach process, but

must be dealt with differently. Representatives explicitly speak on

behalf of others and may be sought because the population is large and

views must be funnelled into the process. A useful representative pro-

cess provides opportunities for issues to be carried back to the wider

constituency for consultation. Representative processes are appropriate

when all those affected by a development or change are on-the-scene,

and where there is some responsibility to ensure a fair hearing for each.

Where the population which will inhabit a place is either not yet

present (as in programming a new community) or simply too large to be

consulted in a representative manner (as in agreeing upon development

standards for a region where elected leadership is not congruent with

the jurisdictional area) the involvement of surrogates may be an effec-

tive way of embedding a sense of clientship into a project. Surrogates

are implicitly meant to reflect the wider population, but not in any

formal way to represent it. They are asked to behave and respond

simply as individuals, acting on the basis of responsible self-interest.

If the group is large enough in number, it is assumed, that as an aggre-

gate they will be reflective of the universe from which they are drawn.

A number of criticisms are commonly leveled at the use of surro-

gates in participatory processes:

1. "They have no stake in the project and therefore will not

take choices seriously and will likely lose interest after a brief

period."

The evidence of projects I have seen where surrogates have been

involved simply does not support this argument. People are willing to

participate and take it seriously for a variety of reasons. They may

see it as a learning experience; learning how decisions get made about

the environments they see around them, learning the physical arrange-

ments that make environments work, learning how an architect or planner

thinks about the world, or a host of other things. Or they may value the

experience socially, widening their circle of friends, enjoying good

company. Or, they may have highly specific ideas about how the world

ought to be changed and may view this as an opportunity to be heard.

If surrogates are paid for their participation, they may see the project

as an opportunity for supplementary income; this is no less a motiva-

tion than many professionals' and we do not always discount their com-

mitment because they are paid. For most participants, the motivation

for continuing the process is some blend of these four kinds of per-

sonal returns. As long as the demands on their time are not excessive, experience suggests they will continue to seek active involvement.

This issue of whether choices may be trusted if nothing is at stake is more complex. Choices that are poorly formulated, or where the consequences of choices are not explained, cannot expect an informed response. But there is plenty of evidence to suggest that the results of gaming or simulations reasonably reflect real world behavior. The important question is often not whether surrogates will react rationally (in their self-interest) to choices, but how well they were posed in the first place.

2. "There is no reasonable way to select surrogates." One obvious way is through random selection. But the retort is often that there is no guarantee that those chosen will be the most articulate spokesmen for a particular point of view. (Curiously, those espousing such a point of view often place their faith in sample surveys.) Again, the onus for communication should rest equally with the programmers, not solely with the participants.

A more serious difficulty is identifying surrogates for situations where clientship is unclear. It may be asked: "how is it possible to know who will choose to live in a new community?" But a second question is equally appropriate: "how is it possible to program or design a community unless some assumptions are made about its occupants?" Asking the former and not the latter is simply avoiding the issue. And there are plenty of precedents for most environmental change projects to help in the response.

3. "Surrogates will be discounted politically, if they are simply drawn randomly."

On the contrary, random selection is often considered a virtue; they have no special axes to grind; they have no history of disrupting "progress"; they offer a barometer of what the mythical "average man" thinks. Those responsible for decisions are often more persuaded by what a random group thinks, provided it is large enough to constitute a reasonable sample, than by the pleas of special interest groups.

Beyond surrogates who speak on behalf of themselves, there is often value in seeking to involve advocates of special groups in the population. For example, advocates for children who are knowledgeable of the demands they place on environments, or of the manifold ways they might seek to use them, can add an essential perspective to an outreach process. They are not representatives in the traditional sense, but if they are reponsible they take care to remain grounded in what their group expects of the places they inhabit.

References – Chapter 10

1. See Claire Cooper, <u>Some Implications of House and Site Plan Design at Easter Hill Village: A Case Study</u>, Institute of Urban and Regional Development, University of California, 1965.

2. Robert White, "The Concept of Competence," in Proshansky, H.M., W.H. Ittelson, and L.G. Rivlin (eds.), <u>Environmental Psychology</u>, New York: Holt Rinehart and Winston, 1970.

3. Zeisel, John, "Fundamental Values in Planning with the Non-Paying Client," in Charles Burnett (ed.), <u>Architecture for Human Behavior</u>, Philadelphia, The Philadelphia Chapter of the American Institute of Architects, 1971, pp 23-30.

4. Kenneth Craik, "Environmental Psychology," in Theodore M. Newcomb (ed.), <u>New Directions in Psychology 4</u>, New York: Holt Rinehart and Winston, 1970, page 85.

5. See William Michaelson, <u>Man and His Urban Environment: A Sociological Approach</u>, Reading, Mass.: Addison-Wesley, 1970, pp. 61-192.

CHAPTER 11 - PARTICIPATORY PROCESSES
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Knowing who to involve in programming is a first step, but the value

of participation will hinge on whether an effective process is devised to

accommodate the presence of non-professionals. Part of the difficulty in

accomplishing this is that notions of "process" don't lend themselves to

easy conceptualizations. In contrast to "hard" knowledge about products,

process information is "soft" -- open to varying interpretations, diffi-

cult to validate, affected by so many variables that the programmer is

often at a loss to know how transferrable procedures might be from one

situation to another. To many designers, talk about process is suspect;

they prefer to judge processes simply by focusing on the products which

result. But once a course of participation is charted, it may not lead

where it was intended to go, especially if non-professionals are given a

license which ranges across the entire situation. Much productive energy

may be wasted by misunderstandings about roles; both designers and parti-

cipants may be disappointed in what the engagement has produced. Thus,

it is essential that the process of involving issues be tailored to real-

istic expectations about the contributions of participants.

In thinking about process designs, it is useful to distinguish be-

tween the several areas of choices which must be made. These are posed

in question form in Chapter 8 and they include:

ORGANIZATION - How people are to be grouped to work together,

how long the involvement will be, what is expected from it.

WORKING ARRANGEMENT - What the sequence of events is, how the

logistics are managed, who should conduct the process.

INFORMATION BASE - How data, information and experience is

injected into the process, and what use is made of it.

NORMATIVE ORIENTATION - How wishes and desires are elicited,

and from whom.

Each of these issues is taken up toward the end of the chapter in the

form of notes based on a variety of experiences with participatory pro-

cesses. But before that, a number of examples of participatory designs -

some whole, some only partial - are described. One of these, the eco-

logue process, is examined in depth in terms of the effect its various

components seemed to have in moulding the viewpoints of participants

whom it engaged.

I

There have been many experiments in participatory programming and

design, almost always accompanied by much rhetoric and little serious

evaluation. The efforts to develop participatory methods have evolved

largely in isolation; there has been an almost conspicuous absence of

attempts to draw together the accumulated experience for the purpose of

comparisons. Yet it is a rich source of ideas and insights.

The term "participation" has become a buzzword — applying to efforts

as modest as a single public hearing and as expansive as a carefully

planned process of working with everyday users of environments over a

lengthy period. The motivation for engaging in dialogue beyond official

circles (paying clients and professionals) have also varied, from consul-

tation in the interests of acquiring better information, to co-optation

with the purpose of preventing delays, to more ideologically-centered as-

pirations of broadening the power to decide. These distinctions have been explored more fully elsewhere;[1] the focus here is on what actually transpires by design and circumstance when such processes are undertaken.

Most professionals who engage in participatory processes are ambivalent about the role which theory ought to play in shaping the course of events. They begin by suggesting an idealized process design, but then interject quickly the disclaimers that events will take their own course and that the leaders of the process must be prepared to improvise from the early stages onward. But that too is a theory -- that the agenda ought to be shaped by the emerging sense of an outcome. It simply leaves unexplained the basis for making such adjustments or shifts in course.

The following eight designs are examples of some of the forms which an outreach process might take. They are arranged, generally, by the degree of prior commitment to a sequence of events, from the least to the most structured. They have also been chosen because they represent consistent lines of experimentation; each has been tried several times and their authors have attempted to improve the process with each successive trial.

Design Squatters

"Squatting" involves, quite literally, setting up a design camp on the scene where decisions are to be made or where the impacts of construction are to be felt. It was first tried in the early 1960's by William Caudill of CRS, Inc., as a way of avoiding the hazards of working at a distance from client and site. As Caudill describes it:

338

"We were working on our first school project -- two
elementary schools...525 miles away from our office...
We were having a most difficult time getting the pre-
liminary plans approved. It seemed that we made at
least four round-trips trying to get the board to say
'yes'. It was always 'no'. Patience, enthusiasm,
and money were running short. Finally, I said...
"...How about you and me loading the drafting boards
in your car..., driving to Blackwell, and squatting
like Steinbeck's okies in the board room until we
get the damn plans approved!" So we did." 2

The success of this project led to the use of squatting for most of the
firm's projects located away from its home base.

"Squatting" has come to include many working methods, each cut to
fit the project. Caudill opposes the routinizing of procedures: "The
squatters, originally a free-wheeling operation, every so often loses
its intent by becoming overstructured...Such overembellishment, over
structured procedures and methods can only lead to premature hardening
of the arteries."[3] Nevertheless, several strategies and techniques
have evolved:

1. A condensed time period. The novelty of squatting in a community
can wear off, and its intensity is dissipated, if the time is too long.
Normally, only programming and schematic designs are done on the scene.
The time is deliberately made too short, creating pressure (and drama)
for the work. It forces programmer and designers to press for resolu-
tion quickly. The professional team agrees to abide by the decisions
reached on the scene -- principally agreements on the package and most
important patterns.

2. Heightened presence of the site. Normally, the "camp" is located
in a place that is highly visible to decision-makers and others they

wish to consult. The building site, and activities that should be taken into account in designing are brought into the "camp" through elaborate graphic displays -- photomurals, diagrams, automated slide shows, and the like, filling the walls of the space. People who drop in are given a quick guided tour of the problem before viewpoints are elicited.

3. Over-the-board consultation. Only one set of drawings, charts or models are made; designers and programmers are forced to work in media that are understandable to non-professionals. While this aids communication, it has the subtle effect of constantly forcing programmers and designers to visualize the problem as the users might. A ground-rule is that anything that has been drawn is open to discussion with visitors. No visitor is ignored; there is never a second set of "real" drawings hidden away.

4. Aids for conflict resolution. Conflict is a common feature of "squatting" -- fueled by the shortness of time, by the diversity of viewpoints which emerge, and by the real commitment to carry through with the results of the process. Participants sense the urgency of making their views known forcefully. Often, gaming or interactive simulations are utilized when the need to make trade-offs becomes obvious. In other cases, designers assume advocacy roles, pursuing alternate solutions to the point where choices can be made knowingly.

One reaction to these "squatting" techniques is that they are simply common sense applied. Yet, they require adjustments to the ways professionals work, and the fact that they are not widely accepted says something about the difficulties of consumating such changes.

Squatting, despite its benefits, has its weaknesses, some of which are revealed in the buildings which have resulted from CRS's efforts and those of other firms. Because time is short, professionals set the terms of the debate. This is most apparent in the gaming, which customarily focuses on what professionals consider important -- spatial configurations, proximities, packages and the molecules of environmental form. But an environment is experienced in terms of what it all adds up to, with details and finishes often assuming greater importance than grand arrangements; yet these are reserved for more private consideration once the camp has been abandoned. Outside participants remain in the situation of reacting, not initiating -- the time is too short, the process is too improvisational, the professionals retain command of the precedents, and normative views are not cultivated. A better process design would seek to penetrate below the surface of immediate reactions.

Solution Modelling

A variety of physical modelling techniques have been developed for helping non-professionals envision the designs they are discussing in a participatory process. Often they are component systems, either constructional components, space modules, or fixtures capable of being grouped. Three examples of the use of such techniques are Neal Mitchell's U-Plan-It Kit[4] (also called the Urban Game, a constructional component system for housing), Jan Wampler's Plan-a-Home Kit[5] (a furniture/wall system capable of rearrangement) and David Judelson's layout design experiments at Newcastle-Saranac Court.[6] These systems deal almost exclusively with pattern issues. The most effective techniques seem to

have two characteristics:

1. <u>Stepped Process</u>. Designs are arrived at in stages, with each stage resulting in decisions that provide the fix for a successive stage. Judelson, for example, worked with an existing housing shell that was to be renovated. He divided the process into two steps. First, he provided wall materials, furniture models and assistance to enable the users to experiment with layouts, and he observed the most preferred locations for bathroom and kitchen cores. In the second step, these were fixed on the models and detailed arrangements for other spaces were determined. Wampler went one step further, again in the context of rehabilitation of housing. A system of wall-dividing components were developed as a result of initial experiments which revealed that storage and furniture facilities were strongly desired as part of the housing package. Later, cores were fixed and prototypical arrangements were designed. Finally, an innovative construction bidding system was devised which allowed final options for apartment arrangements to be held open until tenants were identified, shortly before occupancy. Mitchell's kit actually consists of three sets of models centering on the house, the neighborhood block and the larger environment, and these are utilized in sequence, from the largest to smallest scale.

2. <u>Strong professional assistance</u>. Professional inputs are critical: to point out consequences of decisions that are not immediately apparent (e.g., a traffic pattern that makes a space less private than people might desire), to suggest opportunities that might be explored, and to help make the connection between the model and situations the partici-

pants know (e.g., relating the size of a room to one in their present house). The professional must be careful in how he offers assistance, responding creatively to what people seem to be seeking, but avoiding the temptation of coopting participants to his point of view.

In a less deterministic way, many designers have experimented with "loose parts" -- providing a rich variety of materials that participants may put together to express the qualities a place might have, not necessarily its detailed patterns. Hardy/Holtzman/Pfeifer (architects of New York) provided hair curlers, wood shavings, spools, metal sheets, etc. and etc., in exploring the form of a university building. They interpreted the participants' models as metaphors of the final form, as suggesting whether surfaces should be hard or soft, forms singular or jumbled, spaces penetrable or defined, and so on. Such models avoid the rigid limits which components place on solutions, but because they require participants to think abstractly, they place a greater importance on dialogue to ensure that interpretations are right, and they run the risk of alienating people with what seems to be child's play.

Charettes

Every architect learns to "charette" early in his student career when his avoidance of decisions can only be recouped by all-out efforts in the days (and nights) before a due-date. The "charette" as a participatory technique is founded in the observation that productive solutions often emerge when contending viewpoints are clear and the timetable forces a decision. Several dozen design charettes have been funded by the U.S. Office of Education, Construction Division, to aid

in the planning of inner city educational complexes.[7] One example is

the Takoma Charette in the Shaw area of Washington, D.C.[8]

Charettes follow no single design. They range from a long 16-hour

day to a 2 or 5 or even 10 day marathon. They usually occur in a single

place; the accumulating products are displayed around the walls as they

emerge. They usually seek to involve the full range of those impacted

by, or charged with the responsibility to decide upon, the form of an

environment. A common ground rule is that all decisions get made pub-

licly, in the charette headquarters. A second rule is usually that all

points of view are to be heard before deciding. With that framework,

the drama proceeds.

Charettes differ from squatting in the degree of organization of

both participants and the sequence of events. Several process tech-

niques are reputed to be essential to staging a successful charette:

1. Committee organization. Preparation is essential if a single ses-

sion or short series of them is to result in consensus. Most charettes

are organized with two sets of committees: Those responsible for logis-

tics (finance, publicity, site, hospitality, etc.) — usually non-

professionals; those responsible for assembling the substantive infor-

mation which will be needed to give the process a running start —

usually professionals. The latter will assemble statistics, do site

analyses, provide base-maps, models, or graphic media for structuring

the work, and in other ways ensure that decisions cannot be deferred

because crucial information that is missing is needed. Often, the com-

mittees will bring to the charette alternative proposals and a debate

over these will be among the first agenda items. But the charette may

decide that none are acceptable and new alternatives may emerge in the

heat of debate.

2. <u>Obtaining a commitment to follow-through.</u> Where charettes have

stumbled, it has often been in later follow-through, once hopes are

raised and participants have an investment in seeing the results ac-

complished.[9] A crucial determinant of success is mustering a commit-

ment from decision-makers to attend in more than a token way, and to .

commit themselves to the decisions reached in the charette. That re-

quires a high degree of trust in the process, but without such commit-

ments in advance, the charette runs the danger of unreality.

3. <u>Ad hoc study groups</u>. Most charettes operate in a free-wheeling

fashion, depending upon the chairman to shape the discussion. The

danger is having the event bog down in endless debate over an issue .

which seemingly cannot be resolved. A technique sometimes used by

chairpeople is to halt the debate and appoint an <u>ad hoc</u> committee

(usually consisting of the protagonists) which meets separately from

the main session, and reports back when they have reached a consensus.

Similarly, if the problem lends itself to subdivision, other committees

may be split off to tackle its components. Clearly, much depends upon

the chairperson's skills in managing the large group process.

4. <u>Professional resource people.</u> Specialized professionals are as-

sembled to be on call for special issues which may arise. In contrast

to squatting, the success of a charette often depends upon professionals

assuming a low profile and allowing the central direction to be in lay

hands.

Because charettes are so frequently improvisational, and because no serious analysis has been done of their group dynamics, it is difficult to say with certainty what they contribute. Beyond their aid to programming, they appear to be important as social dramas -- emotions rise to the surface quickly and may be vented; a measure of interpersonal trust may result from the direct communication; if well-managed, they may accelerate concensus on projects where support might otherwise languish as the buck is passed. In some situations, these may be critical contributions.

Take-part Workshops

Billed as "modern day versions of the New England Town Meeting... and the old Indian pow-wow,"[10] Take-part Workshops are really social dramatics elevated to an art form. The workshop format was originated by Lawrence Halprin and his colleagues; they were, and continue to be, influenced by experiments in modern dance, theater, action-art and transactional therapy. The loose structure on which the workshops hang is Halprin's RSVP Cycles;[11] participants cycle through an analysis of the resources available, the processes necessary to accomplishe things (which he labels scores), decisions that are necessary (labelled valuation), and the consequences of all this in terms of plans (performance). Each of the concepts is conveniently ambiguous. "Scores" can mean events designed to sensitize participants to the environments they are dealing with, or scenarios of what it might be like (see Chapter 7).

"Performance" can be actually carrying out process (or scores), or considering strategies for accomplishing what participants think should be done. The ambiguity is purposeful; Halprin is the master conductor of the event; when semantic difficulties become overwhelming, most participants simply throw up their arms and follow his cue. The following is his description of one such process:

> "A participatory process in Fort Worth, Texas, was a two-day environmental and planning workshop for civic leaders, planners, and city officials. Three environmental scores were performed by the participants: A walk in the center city, a helicopter view of the city and region, and a freeway score around the highways and byways serving the city. After lunch on Day Two, participants divided into three planning groups, one starting as though in the year 1840, one as though in the year 1940, and one in the present. Each designed Fort Worth, starting from their own dates, but with the knowledge garnered from the three environmental scores. The results were a number of important discoveries by participants that were later utilized by the planners of L.H. & A. in creating future plans for the central business district and the Trinity River Banks as it wends through downtown Fort Worth. These plans were subsequently enthusiastically adopted and are in various stages of implementation." 12

Take-part workshops have also included training sessions for group leaders, and several dozen one-day to one-week stands in cities that are usually aimed at energizing groups to deal with problems. Their variety, and the extravagant claims of their success (matched equally by comments of outrage from some participants) make it difficult to generalize about what makes them work (or fail). But several themes stand out:

1. Communication on many levels. Much energy goes into sensitizing participants to the many subtle forms of communication which are used in everyday transactions. "Active listening," "congruent sending," and "body language" are some of the sensitivities sought. To witness a group

A score grid for a twenty-four-day workshop, organized as a calendar across eight days (numbered 1–8) with A.M. and P.M. entries for places and events:

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8
place A.M.	San Fran	Kentfield	Kentfield	S.F. → S/R	Sea Ranch — Gualala Community Center	Sea Ranch Gualala Community Center	San Ranch	Sea R...
event A.M.	CITY MAP	1- TRAILS MYTH 2- BLINDFOLD WALK	MANIPULATING BODIES ...	TRIP TO SEA RANCH record the environment	MOVEMENT SESSION identification with the Sea	MOVEMENT SESSION	SENSORY WALK each area to Big Cove	RITUAL DRAW
day	Mon 1	Tue 2	Wed 3	Thur 4	Fri 5	Sat 6	Sun 7	Mon 8
place P.M.	San Fran	Kentfield — upper terrace —	Kentfield	Sea Ranch	Sea Ranch	Sea Ranch	Sea Ranch	Sea Ra...
event P.M.	CITY MAP	1- GRAPHICS 2- LETTER EVENT	1- Assimilate morning sequence 2- Lecture - Community Structures	POMO RESERVATION 1- July 4th feast 2- 1st - talk in ROUND HOUSE	DRIFTWOOD VILLAGE	DRIFTWOOD VILLAGE 1- DESTROY 2- REBUILD as community Confrontation with Gualalans	FAMILY DRAWING	DEPARTURE 1- water 2- I A...

Figure 19 Partial Example of a Score for a Take-part Workshop

The above score for a twenty-four-day workshop was used to establish a sequence of activities, and pre-program the major actions of forty student participators in the San Francisco Bay area within a geographical radius of one hundred miles during the summer of 1968. As the sequence of events was linear (that is, the events were sequential and progressive), not overlapping, and all forty people were always engaged in the same basic activities (interactions were confined to those within the group itself), the score has a calendarlike appearance. The major controlling devices within the score, here, are length of time for each event and its location. Each actual event itself admits for great latitude within the time sequence, and the procedures for each event are not significant to the form of the total score (although they had their own internal meanings). This process enabled the workshop leaders to pre-plan an intricate sequence of events in various locations before the fact, and analyze them before, during, and then after the events with an understanding of their interrelatedness. It also made possible adjustments to the program based on feedbacks during the period, with a full understanding of how these adjustments would affect the events to follow. Within the major calendarlike score, other more detailed scores controlled the specific daily events. These varied from happenings to precise theatre pieces and environmental events. (See City Map, p. 79 for a complex and overlapping score for day I.)

of businessmen groping blindfolded in a crowded room must be a remark-
able assault on stereotypes, albeit one which raises questions about
purposes. But if nothing more results, most participants agree that
they became more attentive of others' feelings.

2. Developing environmental sensibilities. Carefully scored excursions
into the real environments where changes are sought generally open par-
ticipants' eyes to things they have never noticed. Halprin, as pied
piper, is, whatever else, a magnificent tour guide.

3. Consciousness of time. Beyond people and place, "time" is dealt
with in many ways in Take-part Workshops, from conscious attention to
the procession of group events, to historiography, to elaborate scores
for decisions which must be taken. Participants generally come away
with a better understanding of how actions must be synchronized.

4. Linking projection with reflection. Used one way, "performance"
and "valuation" mean, respectively, projecting ideas and reflecting on
their consequences. This conscious shifting between idea and conse-
quence is a process which characterizes many of the workshops. Often,
games are used to explore consequences; participants assume roles of
those reacting or living in a proposed environment.

As with any process which depends heavily on the skills of the
leader, it is difficult to gauge the range of situations where the take-
part process would be effective and how it would fare under other
leadership. I suspect that it is more applicable to situations of
environmental diagnosis than to environmental development, if only be-
cause its novelty can liberate attitudes and emotions but may be less

The Planning Aid Kit (PAK) Process

The PAK process grew out of federally-sponsored efforts to improve the quality of mental health care services and the environments in which they are administered. Developed by teams working with Michael Brill and Richard Krauss, the methodology has gone through two distinct stages, each of which has been applied, both to mental health program planning and to other facility programming projects. The first consisted of a workbook which was completed by participants individually and in the course of a series of group meetings (this was one of the techniques used in programming Chandler Village, see Chapter 3).[13] The later form is less deterministic, consisting of an agenda, participants' and leaders' training manuals, and a series of wall charts used to record information and ideas.[14]

In both versions of the process, the underlying notion is that group work may be aided if thought and discussion is deliberately ordered and recorded. The sequence proceeds from a diagnosis of the problem, to a clear statement of what is needed, to the exploration of solutions, to the ranking their relative values, to finally deciding upon a means to accomplish the solutions. In the early version of the PAK process, aimed explicitly at environmental programs, this was accomplished by filling out forms which transformed a "problem" into a prescription:

- On the first form, problems were recorded, together with their causes and effects.

- For each of these problems, a second form invited partici-

pants to propose "courses of action" aimed at re-

ducing or solving them.

- Next, specific "activities" were elicited as flowing

from the courses of action.

- Finally, each participant was asked to describe the

attributes of an environment which would be supportive

of each of these activities in terms of a series of

scaled adjective pairs -- centrifugal-centripedal, warm-

cold, quiet-noisy, etc. While the forms were completed

separately, meetings at each stage allowed views to be

exchanged, and a system of voting allowed the group as

a whole to reconcile differences and assign priorities.

A number of difficulties surfaced during attempts to apply the

initial PAK process. First, the process was considered overwhelmingly

bureaucratic: It required painstaking attention to detail; it meant

tedious completion of forms, seemingly for their own sake; and it pena-

lized those who wished to jump ahead to solutions or reconsider what

they thought earlier were problems. Second, it seemed to say to parti-

cipants that only problems were to be the source of solutions, that

goals which couldn't be traced to present failures were less important.

Thus, programs became excessively remedial. Finally, the process broke

down when it came to ways of describing environments. While it was

possible to agree that a setting ought to be warm, quiet, centrifugal

and closed (sketchy definitions were provided for each), there was no

guarantee that everyone meant the same thing by these terms or that a

designer could match what people expected if he started from such a des-

cription. The adjectives were too abstract and remote from everyday

ways of thinking about environments. For these, and a variety of other

reasons, the second version of the PAK process abandoned the use of

forms completely.

In its current form, the PAK process consists of a core of ten or

more weekly group sessions, preceded by an extensive preplanning process,

and often followed by implementation workshops (see Figure 20). Much

more emphasis is given to group dynamics and collective work. Preplan-

ning consists of training group leaders, surveying existing activities

and facilities, planning logistics and completing other start-up tasks.

A manual explains, in great detail, how to lay this groundwork. The ten

core sessions are held weekly and generally involve 10 to 20 participants

in each group. In the case of mental health center planning, the group

usually includes a mixture of professionals who provide services, adminis-

trators, board members and a sampling of those who will rely upon the

services. The PAK manual provides an agenda for each session and gives

a series of hints about how to structure the dialogue. A series of

large blank charts are arranged around the walls of the room. They are

of four types: "Data," "Problems," "Programs," and "Implementation."

As ideas are advanced, they are recorded on the appropriate charts; they

remain as reference sources for successive sessions.

Several working methods are key to conducting an effective PAK
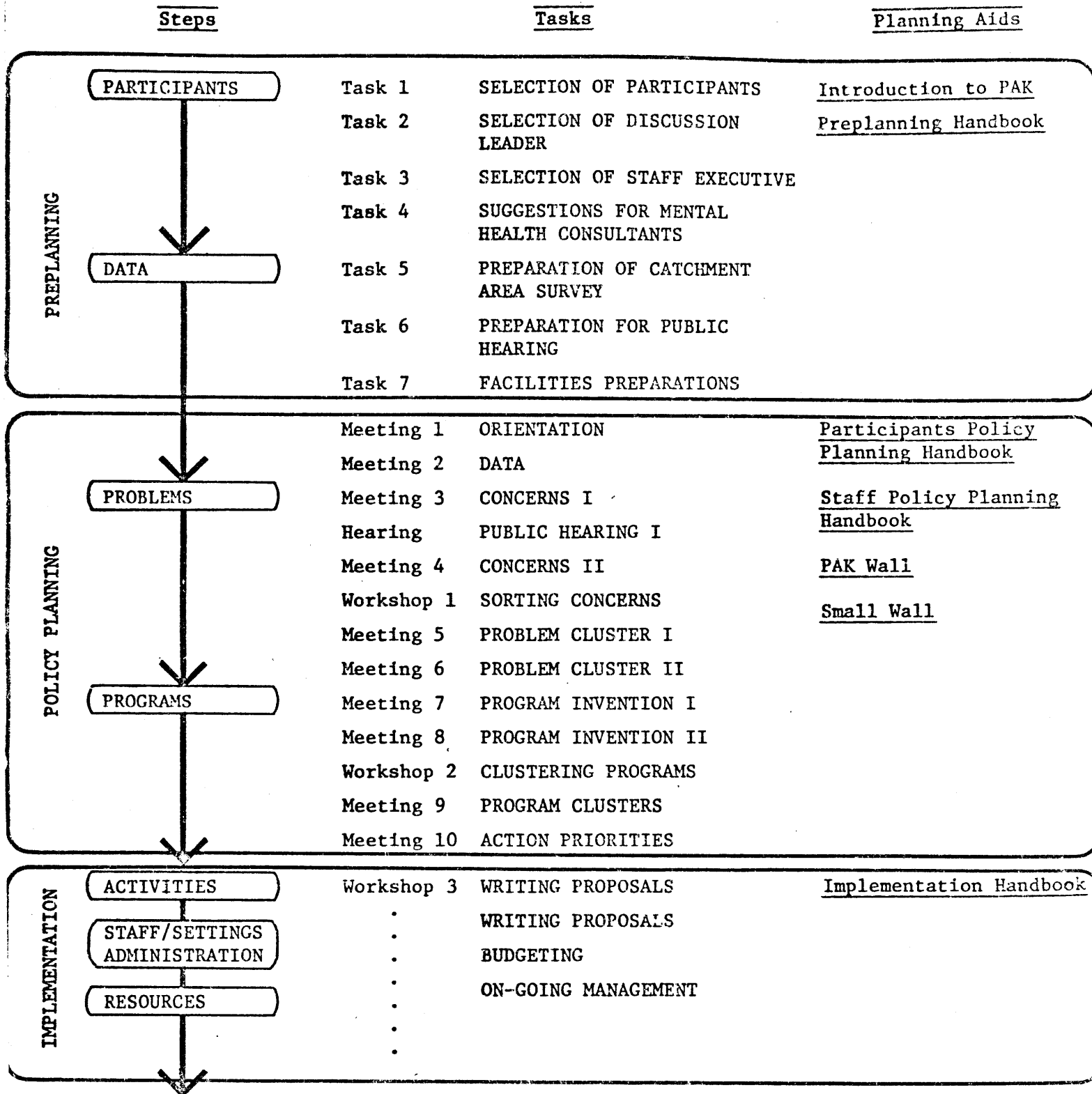
process:

Steps	Tasks		Planning Aids
PREPLANNING			
PARTICIPANTS	Task 1	SELECTION OF PARTICIPANTS	Introduction to PAK
	Task 2	SELECTION OF DISCUSSION LEADER	Preplanning Handbook
	Task 3	SELECTION OF STAFF EXECUTIVE	
	Task 4	SUGGESTIONS FOR MENTAL HEALTH CONSULTANTS	
DATA	Task 5	PREPARATION OF CATCHMENT AREA SURVEY	
	Task 6	PREPARATION FOR PUBLIC HEARING	
	Task 7	FACILITIES PREPARATIONS	
POLICY PLANNING			
	Meeting 1	ORIENTATION	Participants Policy Planning Handbook
	Meeting 2	DATA	
PROBLEMS	Meeting 3	CONCERNS I	Staff Policy Planning Handbook
	Hearing	PUBLIC HEARING I	
	Meeting 4	CONCERNS II	PAK Wall
	Workshop 1	SORTING CONCERNS	Small Wall
	Meeting 5	PROBLEM CLUSTER I	
	Meeting 6	PROBLEM CLUSTER II	
PROGRAMS	Meeting 7	PROGRAM INVENTION I	
	Meeting 8	PROGRAM INVENTION II	
	Workshop 2	CLUSTERING PROGRAMS	
	Meeting 9	PROGRAM CLUSTERS	
	Meeting 10	ACTION PRIORITIES	
IMPLEMENTATION			
ACTIVITIES	Workshop 3	WRITING PROPOSALS	Implementation Handbook
STAFF/SETTINGS ADMINISTRATION	.	WRITING PROPOSALS	
	.	BUDGETING	
RESOURCES	.	ON-GOING MANAGEMENT	
	.		
	.		
	.		

PAK PARTICIPANTS POLICY PLANNING HANDBOOK   FOREWARD   3

Figure 20   Outline of the PAK Process

1. <u>Cross-section of key actors</u>. While groups are moderate in size, it is crucial that each represent a microcosm of actors in the system: providers, administrators, decision-makers, users. To keep group sizes down, several parallel processes might be run, but it is essential that each be a cross-section, not differentiated by roles. This allows problems to be confronted directly by all who will have a hand in their eventual solution.

2. <u>Groundwork</u>. As in the case of charettes, professionals organizing the process are responsible for assembling base data and presenting this to the group (meeting 2). Participants react to this and may seek information that seems to be missing (which is then assembled by the leaders), but do little data-assembly themselves. That way, their attention is not diverted from the central task of formulating a program.

3. <u>Sorting of ideas</u>. This occurs in two ways. When a participant makes a suggestion, the group leader records it on the wall charts. If it is ambiguous, or if it is a mixture of diagnosis and prescription, the group leader may ask for more elaboration to know where and how it should be recorded. (S)he may ask: "Do you mean that as a proposal, or are you simply suggesting that's a problem we should be paying attention to, for which one solution might be..." Creative use of the wall charts can help to separate means from ends, and highlight alternatives in both spheres. The second sorting device is the use of interim meetings at key points, with a subcommittee of participants present, to take the "raw" suggestions and form them into categories. Based on this, clusters of concerns or programs are considered together in the

next large session. Often, this prevents fragmentation of discussions.

4. <u>Assigning priorities</u>. A common PAK technique for shaping the direction of group work is formal voting on priorities. This may be done once a lengthy list of suggestions has been assembled, and will help direct energies into areas considered most crucial by the group as a whole. Planning manuals suggest that participants do this for themselves between sessions, and they suggest techniques for group resolution.

The strength of the PAK process, when it has been tried, has often been the attitudinal shifts which emerge when professionals and their clients engage in an extended dialogue. Participants often acquire a better view of how they personally can change things, and continue to do so. Professionals are struck by the way their efforts are perceived and often misperceived, and they may change their way of working. The principal weakness of PAK has been its inability to build a structure for follow-through. The process generally aims to produce a "performance specification" for programs and settings. More often, the group has had to settle for a lengthy list of ideas, with professionals left to see them actually accomplished.

Participatory Use of Pattern Language

When human behavioral tendencies become understood and known, there is always a danger that this knowledge will be used as a substitute for not consulting the users of environments directly. The Center for Environmental Structure, to its credit, has maintained that pattern lan-

guage is a vehicle for dialogue, not an excuse to avoid it. It has

complemented its development of patterns with experiments that use them

as aids in participatory processes. It has also sought to establish

the right kinds of institutional conditions for the use of patterns to

be effective.

The mechanics for composing patterns have been described previous-

ly (Chapter 5). They must be used creatively, and problems must be

formulated in the right terms, for them to impact design. Some of the

process principles which have emerged from the participatory use of

pattern language are:

1. <u>Problems of manageable scale.</u> Participation is encouraged

when people wrestle with the places most immediate to their everyday

life, and discouraged when they are asked to help decide about remote

and complex problems. Thus, environmental changes must be broken down

into pieces to which small groups feel an intense commitment. Large

building projects should be discouraged; smaller renovation or develop-

ments encouraged. In preparing the development plan for the University

of Oregon[15] (they actually proposed an ongoing <u>process</u> of planning, not

a single plan), CES suggested a logarithmic scaling of projects: For

each $10 million project, there should be ten $1 million projects, a

hundred $100 thousand projects, and so on.

2. <u>Constant maintenance of a pattern catalogue.</u> Any large insti-

tution which manages environments ought to maintain a catalogue of its

development policies in the pattern language format, to be updated

routinely. The desirability of patterns can be considered at times not

tied to specific building projects, and the outcome later applied when projects arise. This process of reviewing patterns should be public; any member of the community or group is encouraged to propose patterns. Thus, participation should be constant, not sporadic, or simply when crises or projects appear. An annual diagnosis should be made by the planning unit to determine how well current environments measure up to desired patterns.

3. <u>Calls for project proposals</u>. The current pattern catalogue should be available to all users of an environment. Periodically, those with responsibilities for decisions should publicly solicit project proposals from any individuals and groups who see the need for environmental changes, or see ways of adjusting environments to accomplish approved patterns. For example, when a pattern calling for departmental "hearths" is adopted, many ingenious ways of accomplishing this may be proposed through an open solicitation.

4. <u>De-professionalization of programming for specific projects</u>. In the Oregon case, CES advocated a policy of hiring architects only after the initial program (a collection of desired patterns) and a trial design (combining the patterns) were done by the users of a projected environment. In that way, user-control over the essential ingredients of an environment was to be assured.

5. <u>Deferring fine-grained decisions</u>. For some types of projects, users are not yet on the scene to participate in decisions. CES has, in such cases, sometimes deliberately deferred choices on detailed patterns, or even the environmental package, leaving these to be re-

solved when the users arrive. One example is the Procjecto Experi-
mental de Vivienda,[16] a housing project in Peru, where detailed house
layouts were excluded from overall project designs. In their place,
a user-programming manual was devised, allowing details to be com-
pleted by the occupants before moving in. This process was similar to
that of Wampler, cited earlier. As a general rule, it is worth asking
how little of the program must be firmly decided at the outset of a
construction project, and how much can be deferred to the later deci-
sions of its occupants.

These are some of the strategies which seem important to support
effective participation of users in programming, when pattern language
is employed. Unfortunately, there is little documentation of the re-
sults of such processes and many of the principles remain to be tested
in practice.

Planning and Design Workbook

The Planning and Design Workbook (PDW) is a weighty volume pre-
pared by a team at Princeton working under the direction of Bernard
Spring.[17] It was intended as a self-contained process guide which
would enable community groups, without professional assistance, to
program and prepare sketch designs for environmental changes. The
workbook has four parts. It begins with a series of general proced-
ures for analyzing community needs and making package decisions. It
elaborates these with examples, and provides forms for participants to
use in the analysis of their situation. The next three sections pro-
vide the working tools for deciding upon a program for community ar-

rangements, a housing site, and an individual dwelling unit. Each provides a detailed step-by-step procedure for producing a proposal, outlining the essential choices, providing factual information and examples, and describing the materials needed to illustrate the proposal.

The Planning and Design Workbook is, in essence, an idealized version of planners' and designers' working methods; the implicit assumption is that lay persons would be successful if they worked the same way. It treats lightly issues of group process -- in fact, it implies that the same process would work equally if a single individual or large group were involved. Thus, it differs greatly from previous participatory techniques, and one of its principal contributions is the demystification of the process of moving from needs to proposals. In doing so, it puts a wealth of material at the participants' disposal. Its main process characteristics are:

1. <u>Goal reduction techniques</u>. The PDW begins with goals or issues, not problems, like PAK. It provides a list of commonly-encountered issues and explains some of the alternate policies which might be responses to them, then encouraging participants to add to these. The central concept of process is that programming is a sequence of choices among alternatives, from general to specific. The metaphor is a decision tree; the workbook provides help in knowing the consequences of decisions.

2. <u>Use of precedents</u>. Much of the catalogue consists of drawings and notes on precedents. In the case of housing site plans, there are

DESCRIPTION
A field organization of one-story, direct access court houses;
private open space on grade, adjacent to dwelling units;
common open space, reduced to access;
common parking on grade, near to and shared by groups of dwelling units.

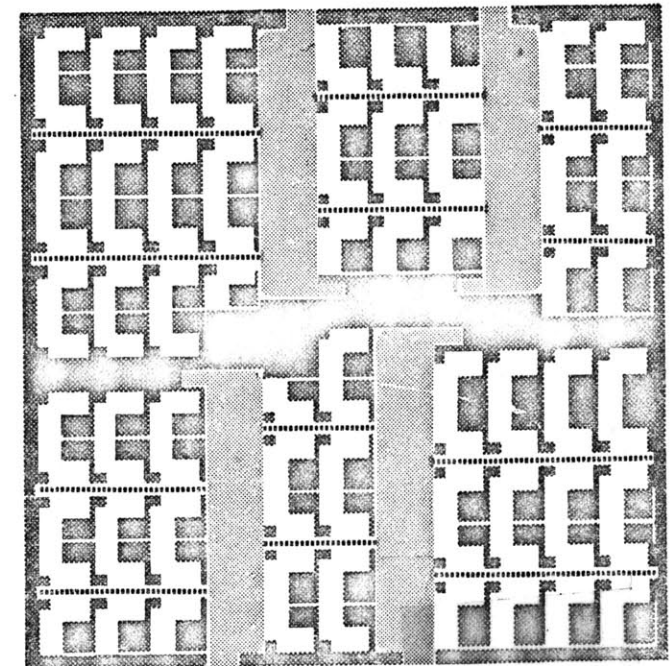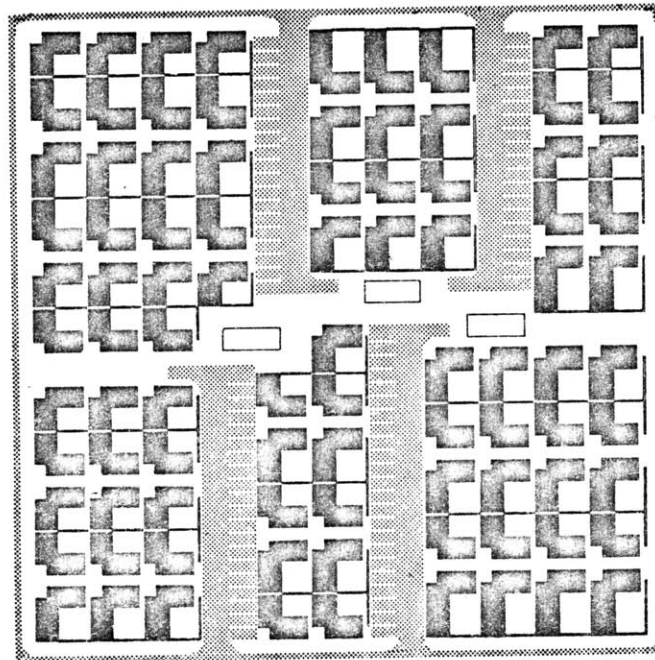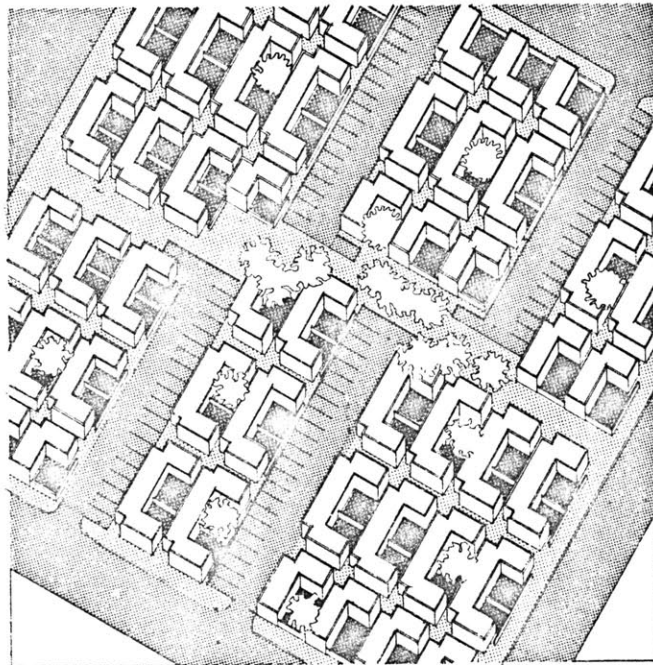|	
total number of dwelling units	91
density in d.u./acre	22.5
total number of parking spaces	81
parking ratio	0.9

Figure 21   A Catalogue Page from the Planning and Design Workbook

some thirty building types and arrangements. Each is tied to particular choices about intentions and provides a graphic illustration of possibilities. To arrive at a specific proposal for a particular site, participants are shown how to choose among the catalogue examples and how to adapt the design. Originally, the catalogue was in loose-leaf form and the intention was to constantly add examples in a consistent format. The cost and energy required to support such an ongoing program simply did not materialize.

The Planning and Design Workbook was a labor of love, based on the (perhaps) ill-founded notion that it would be possible for any lay person to behave as planner or designer if the secrets were simply laid bare. How -- in detail -- it would actually be used in a participatory setting was never quite clear. A follow-up evaluation[18] revealed that when it was used at all, it was mostly an aid for professional designers in communicating with community groups. Secondarily, it was an important reference for design students. The catalogue proved quite valuable for these audiences, but not useful to strictly lay groups.

The Ecologue Process

At the opposite extreme to the design charette is the ecologue process -- a highly structured, lengthy sequence of events planned for a carefully-chosen sample of those impacted by environmental changes. The process has been applied to problems ranging from the programming of individual buildings to the redesign of street environments to preparing an action plan for an older neighborhood. Two examples of its

usage have been described previously (see Chapters 3 and 9); the in-
tention here is to describe in a comparative way its process princi-
ples.[19]

In rough outline, Ecologue consists of a series of small group
sessions in which participants analyze how they feel about an environ-
mental situation, collect data about it, discuss what they would like
the environment to be like (both personally and collectively) and for-
mulate proposals which lead in that direction. They are aided by:
An agenda which schedules personal tasks and group contact; a set of
techniques for surfacing and structuring viewpoints; a set of events
which provides for communication. The process varies in its details
from one application to another, but several common themes are present:

1. <u>Small-group organization</u>. Groups of up to 5 or 6 are optimal
in encouraging viewpoints to be expressed, especially among those in-
experienced in public participation. Moreover, groups are less threat-
ening if their members are socially alike, even friends before the
process. In this way, Ecologue contrasts sharply with PAK.

2. <u>Knowledgeable self-interest is the best basis for collabora-
tion</u>. People cannot genuinely agree with others on proposals unless
they are clear about what they would like, and becoming so requires
that they turn their thoughts inward before outward. Many of the early
sessions are devoted to self-directed environmental analysis, probing
both what people feel about their existing environments and what they
would like ideally. Consensus is built up, first among members of the
small group who are alike, then through inter-group discussions and,

only at the end of the process, among the entire group of participants. Drawing maps, plans and images, together with photographing meaningful places and much discussion, are means for self-analysis and exchange.

3. <u>Professionals as facilitators</u>. The roles of programmer and participant are sharply distinguished: The former is the guardian of the process, the latter is responsible for the products. Manuals, task descriptions and group process techniques all serve to aid the professional in managing group work.

Use of the Ecologue process has had a variety of consequences, some positive, others negative; some of these are detailed in the section which follows. But it is probably fair to conclude that its greatest strengths have been in facilitating inter-personal understanding and trust, bringing an enormous range of normative ideas into play, and in forging a consensus about actions to be taken. Its weaknesses have included lack of faith in several of its techniques (such as drawing) among some groups, the lack of ways of introducing precedents, and lengthiness of analysis before moving on to proposals.

In summary: each of the eight process designs described above offers ideas about structuring participatory processes, but each also has been tried in only a limited range of circumstances, so that its limitations are not fully understood. Referring to the four types of programming situations outlined in Chapter 8, Table 7 represents my assessment of the most appropriate applications of each of the techniques.

TABLE 7

APPLICATIONS OF PARTICIPATORY TECHNIQUES

(A)= Actual Trial Use
(P)= Potentially Applicable

Situation: Environmental Diagnosis

> Charettes - especially useful in surfacing conflicts over use. (A)
>
> Take-part Workshops - useful in heightening sensitivities to both positive and negative aspects of current environments. (A)
>
> PAK Process - aims specifically at identifying problems of current misfits and their causes and effects. (A)
>
> Participatory Pattern Language - diagnosis can occur by comparing actual settings with desired patterns. (A)
>
> Planning and Design Workbook - analysis of goals can aid in clarifying needed environmental changes. (P)
>
> Ecologue Process - three-way analysis is applicable: likes and dislikes of present setting; existing-ideal environmental comparison; goals analysis. (A)

Situation: Environmental Replacement

> Squatting - perhaps most effective in such cases where the squatters camp can be located on the existing premises. (A)
>
> Charettes - can be useful in addressing conflicts over current use of environments and in resolving how to proceed. (A)
>
> Solution Modelling - perhaps the most appropriate use for such techniques. (A)
>
> PAK Process - can aid in discovering problems that must be addressed in replacing an environment. (A)
>
> Participatory Pattern Language - provides an excellent format for cataloguing what is valued in current settings so that they are not lost in their replacement. (P)
>
> Ecologue Process - another technique for surfacing what is currently valued. (P)

TABLE 7 (continued)

Situation: Environmental Development

    Squatting - appropriate, but special efforts are required to ensure that potential occupants, as well as those currently on the scene are involved. (A)

    Solution Modelling - can be effective as a stepped process. (A)

    PAK Process - useful if it can spring from currently known precedents. (A)

    Participatory Pattern Language - perhaps the most effective technique for such situations, it builds on what is known and goes beyond. (A)

    Planning and Design Workbook - useful if problem is in an area where catalogue has been prepared. (A)

    Ecologue - portions, especially the analysis of ideal environments, can be effective. (A)

Situation: Environmental Management

    Solution Modelling - could be used to "pre-test" possible changes. (P)

    PAK Process - provides a format for surfacing problems and setting performance objectives. (P)

    Participatory Pattern Language - can serve as a constant set of standards for review and updating of environments. (A)

II

A nagging issue which is often posed about participatory processes
is the effect which a carefully orchestrated structure and sequence of
events have on the views which participants express. It is sometimes
asked: "Wouldn't you get the same results if you simply asked people
directly what they wanted, dispensing with the elaborate process of
gamesmanship?" Or in another form, skeptics argue: "People basically
know what they want. So-called participatory processes, at best, help
them to phrase their wants or, at worst, allow the leaders of the pro-
cess to subtly convince them they want something else." These are serious
challenges, and they require one to face up to the purpose to be served
by procedures which go beyond the simple interview or conversation.

It is never possible to know completely how outcomes are shaped by
events, because time cannot be turned backward and rerun under different
circumstances. But a careful analysis of the evolving viewpoints and
behavior of participants in the Cambridgeport Ecologue Project (see
Chapter 9) does reveal important shifts that may be attributed to the
process. The analysis which led to this conclusion took two forms.
A forward analysis charted people's views from first contact through
each of the steps in the process, observing whether and, if so, how
they shifted, and asking: what ideas and concerns dropped by the way-
side, and why? what ideas were reinforced, and why? what new view-
points emerged, and why? A second analysis, working backwards, began
by observing the concerns which people emerged from the process dedi-

cated to work on, and sought to identify when these were first expressed as important. The two analyses were done both qualitatively (observing the way concerns were expressed and their apparent intensity) and quantitatively (using the number of times ideas were expressed as a rough guage of their importance).

The results may be summarized as follows:

1. There was rather little correspondence between what people said before joining the process were the main problems and opportunities in Cambridgeport and the action committees they joined at the conclusion of the process. Overall, accounting for multiple initial responses, only 13 of 69 subjects (22%) chose to work on areas they had flagged initially as being important. This is one form of evidence that argues strongly that the process significantly altered at least people's sense of priorities about needed changes to the neighborhood.

2. At what point in the process did the issues emerge on which people decided later to work? The short answer is that each step contributed a few of the germinal ideas. Members of the Parks and Open Space Committee did in fact mention or comment upon such spaces slightly more frequently (average number of mentions exceeded the norm) in individual maps of the current neighborhood than did others who later chose to work on other areas. This was also true for members of the Day Care/ Better Education Committee. A few concerns, such as entrepreneurial opportunities in the neighborhood emerged from the ideal neighborhood images. Some concerns—such as the need for a newsletter in the neighborhood—arose midpoint in the process, when groups were asked to list

prioritize the areas of problems, opportunities and needed action. Not one individual mentioned the lack of a community newsletter as a problem in the pre-program interviews. Other areas of concern, such as the need for action on drug abuse, emerged among the members of the Ecologue group almost independently of the formal activities of the program. Individuals who had become friends during the process began meeting on the subject even before formal committees were established.

3. The process of making a commitment to act in a particular area represented a delicate balancing of personal perspectives on what was most crucially needed (most participants had more of these than they had evenings to work on them) with friendships and interpersonal allegiances. The not-sp-subtle message of the Ecologue process was that individuals acting voluntarily and alone could have rather little impact on the neighborhood, while collective action stood a greater chance energizing action. Strength was clearly to be found in numbers. Whether or not this was true, most participants who remained with the process (self-selection undoubtedly played a role) believed it and acted accordingly. Thus, several of the committees that were initially formed--the committee on neighborhood enterprises was a good example--gradually disappeared when it became clear that it would not achieve a sufficient threshold of numbers; its members shifted to committees reflecting other of their concerns.

Similarly, one individual who believed the highest priority for action was to shape the Simplex project to suit neighborhood needs eventually became dispirited when he could not recruit others to the cause. In several instances, Planning Aides served as the catalyst for mobilizing

a committee; the most notable example was the Parks and Open Space Committee which acted quickly to clean up several vacant lots in the neighborhood. Although its members all shared a common concern for recreation opportunities, they were an unlikely group (principally teenagers and the elderly) and likely would not have stayed together without the prospect of seeing immediate results.

The Ecologue process demonstrates with some certainty that the dynamics of a structured group process can shape the outcome of ideas and proposals in at least several ways: some individuals' concerns are dropped as they prove unfounded or intractable through field analysis and discussions with others; new concerns are added as the result of dialogues with others, or of thinking for the first time about what would be an ideal world; the need to choose between conflicting alternatives forces clarity about the issues which are most crucial; and perhaps most importantly, the necessity to focus on only a few among many concerns requires participants to place values on a complex equation of personal and social allegiances. The Ecologue process is just one of the several process designs described earlier; for the others, detailed knowledge about effects is unavailable or impressionistic at best.

III

In deciding upon how to conduct an outreach process, the programmer must use whatever hunches are available, and a large measure of common sense. Evaluations of the results of particular processes can inform the decisions, but the programmers' choices about format are often limited by budget, political realities, time available in the schedule, and staff

capabilities. Nonetheless, he has choices, which can be made either

explicitly or implicitly, including the following.

1. Long processes vs. short processes

There is no "right" length of process, although the purposes which

may be served are heavily dependent on its length. Most often, the

length of a participatory process is determined by outside constraints.

There are also limits on the energy, perserverance and hours which par-

ticipants are willing to devote to an outreach process, although these

are somewhat elastic depending upon how central the issues involved are

to their everyday lives. Participatory processes often fail because they

attempt to accomplish too much in too short a period. Experience suggests

that a short process must be thought of quite differently from a long pro-

cess; the former cannot simply be a telescoped version of the latter.

Psychotherapy provides a useful analogy for the difference between

long and short processes. When the psychiatrist has the opportunity for

extended contact with a client, it is possible to construct a model of

his situation from elemental experiences, and to evolve and even test

through a set of actions and further refinements to this model. Where

time and contact are short, the psychiatrist's process becomes one of

fitting stereotypes to develop an approximate model. He must carefully

direct the discussion, aiming at information which will allow him to re-

ject possibilities in favor of others. If the analogy to programming

holds, it suggests that modelling with respect to the precedents designers

draw upon (such as are embodied in Pattern Language and The Planning and

Design Workbook) can be a powerful ingredient of short processes. Over an extended period, techniques which enable participants to more power-fully understand and express their attitudes towards an environment (such as Take-Part Workshops, Ecologue, the PAK process) become a sound investment. (One confirmation has been the disappointing results of all three of the processes when they are condensed in time: participants fail to understand the value of experiences; they are let down by the apparent gap between what they are doing and decisions which must be taken; and designers write them off as interesting excursions with little bearing on their problem.)

An effective short process--with less than 3 or 4 opportunities for contact--is often choice-centered. If designers are actally involved in directing the process, rather than a separate programming staff, they can be testing directly their emerging models of the appropriate solution. A useful form of preparation is cataloguing the attributes which the environment might have (in visual or graphic form), and arraying these in terms of choices which must be made. Sessions must be tightly struc-tured, and intervening periods can serve as an important time for analysis and reflection.

On longer processes, there is less need for advanced structure. The participants themselves should be, and often will demand to be, involved in determining events. The process can become proposal-centered, with professionals serving as resource persons to the group, or as facilitators of group wishes. Knowledgeable and articulate participants are often the most effective spokesmen to designers.

It is important to choose at the outset between the differing characteristics of a long as opposed to a short process. The danger in not choosing is, on the one hand, a Charrette that is too unstructured for its short duration, or a squatters camp that is ill-equipped to quickly elicit choices from visitors; and on the other hand, an equal danger lies in an Ecologue process or Take-Part Workshop that never gets to the real choices because time is too short.

2. Large Groups vs. Small Groups

Often the programmer has little control over the overall numbers who must be involved in an outreach process: if some are to be consulted, others must also be invited to participate, and numbers soon grow until they are out of hand. Group size assumes importance, especially when it is coupled with the length of process contemplated. If a short period is available for meeting with a large group, the entire time may be taken up with "station identification" by those in attendance, and discussion may never extend below the surface. Much also depends upon the homogeneity of group interests: a larger group can usually get on with the task of proposing or reacting to proposals more expeditiously if its members are like-minded. The question of group size, therefore, is the linked question of how large a group can be accommodated meaningfully based on how their participation is organized through structure and events.

The several process designs described earlier offer a range of options for effective group sizes. Solution-modelling techniques work best if a

small number (1-5) people are consulted at a time because it requires hands-on "play" with the design aids. The Ecologue process seems to be most effective if organized in molecules of 4-6 persons of relatively homogeneous backgrounds; below that number it is difficult to sustain interest over an extended period; above that number, participation is less equal than desired. The PAK process has been effective with groups of 10-20, deliberately mixed in their composition, although nearing the upper limit it becomes difficult to avoid a split between participants and observers. Charettes have been conducted successfully with groups numbering over 100, although with very large groups it becomes important to split activities into smaller sub-groups.

As a general rule, the more "task-oriented" the enterprise, the smaller the group should be. Where precise outcomes are desired, these run the dangers of becoming muddled by competing perspectives of how to view the task, or if many minds must be brought to the point of consensus. If the intention is, on the other hand, to broaden how a problem is viewed or open up new avenues for its solution, a large group can often offer a richer environment in which this can happen.

3. Solution-Centered vs. Goal-Centered Approaches

One way of contrasting the Ecologue Process with the Participatory use of Pattern Language, is that the former is a goal-centered approach while the latter is solution-centered. The two represent differing styles of grappling with issues. As I have noted, one basis for choosing between them is the length of time available for a participatory process. But there are also other factors which must be taken into account.

The experience with the Ecologue process revealed differing motivations which two groups brought to the process. One group believed that they had clearly-formulated ideas about what should be done and they wished to test the waters immediately by attempting action. So much was needed to be done, they believed, that any actions could not help to improve the situation. Only when changes prove impossible is it worth reconsidering goals. Another group saw the process as a useful step in clarifying the bases for action, believing that only when there was a consensus on goals could specific actions be contemplated. Since the process was oriented principally towards the second of these groups, tensions arose from the outset over the purposes of the process.

Most situations will involve a mixture of individuals of the two mind-sets and the trick is often to blend opportunities for both action and reflection, so both groups see their interests reflected in events. In that sense, a format such as in the use of Pattern Language offers the dual opportunities of looking for places where desired improvements can immediately be accomplished, while also inviting contributions to the question of what should be done. At an early stage of designing a participatory process, an assessment of the likely orientations of participants can suggest which way the process should be shaded.

4. Participant-Directed vs. Professionally-Directed Processes

Again, the length of process has a bearing on whether it is better to aim for participant or professional direction, but much will also depend upon the capabilities of both groups. If organized constituencies exist and are to be tapped, there is usually some compulsion to respect

standing patterns of leadership. If the group is an ad-hoc creation

for the purposes of a single project, it may be both more efficient

and effective to have professionals conduct the process.

One potential source of misunderstanding in participatory processes

is how the professional views his role. Each of the examples of pro-

cesses described earlier mandates a somewhat different relationship

between professional and client, and individuals are not equally adept

at all of these forms of behavior. But that fact often only becomes

clear after a professional has tried conducting processes of various

types.

In a more general vein, there is a need for a construct to describe

the role of those who aim to become proficient at managing participatory

programming. The model of the process consultant--an idea in good cur-

rency in management circles--somehow seems too shallow, too detached,

to be persuasive. The issues of environmental programming are too

vital to people's daily existence to accommodate neutrality on the part

of process leaders. When crucial direction is required, professionals

and participants alike are unlikely to trust the judgements of those un-

committed, in the deepest sense, to the quality of what gets produced.

One useful image of effective process leadership is that of the

"environmental animator" (or animateur, the French meeting is slightly

more precise). He joins the process as a co-participant, his special

skills are in helping to give clarity and tangibility to the often

loosely-formed images of other participants. That cannot be done as

an outsider; if he is to breathe life into intentions, he must draw on

inner resources and personal knowledge as well as what he hears and sees.

Exaggeration, coloring, juxtaposition and the other tools of animation can be useful both for sharpening images and communicating them, whether in verbal or visual terms. But a fine sense of judgement is required to know what license may be taken with others' thoughts. The final product of his efforts are indistinguishable by source, but bear the marks of his particular insights.

Footnotes - Chapter 11

1. See Sherry Arnstein, "The Ladder of Citizen Participation," <u>Journal of the American Institute of Planners</u>, July 1966, pp. 216-224; Langley Keyes, <u>The Planning Rehabilitation Game</u>, Cambridge, M.I.T. Press, 1970; Robert Hollister, <u>From Citizen Participation to Consumer Control in Health Planning</u>, unpublished Ph.D thesis, M.I.T., 1971.

2. William Caudill, <u>Architecture by Team</u>, New York, Van Nostrand Reinhold, 1971, p. 311.

3. <u>Ibid.</u>, pp. 314-315.

4. Neal B. Mitchell, "Prescriptions for Housing Developed from Gaming Techniques," <u>Milbank Memorial Fund Quarterly</u>, New York, 1969. See also, Hans H. Harms, <u>Toward Participatory Dwelling Design: Process and Product</u>, Cambridge, M.I.T. Community Projects Laboratory of the School of Architecture and Planning, January 1972.

5. Jan Wampler, Design Award, <u>Progressive Architecture</u>, January 1973.

6. David Judelson, et al., <u>Tenant Cooperative Housing Rehabilitation</u>, Cambridge, M.I.T. Community Projects Laboratory of the School of Architecture and Planning, May 1970.

7. The only known general documentation of Charette is processes, a curious piece by W.L. Riddick II, <u>Charette Processes</u>, York, Pa., George Shumway, 1971.

8. William Denham, Tunney Lee, et al., <u>The Takoma Charette</u>, Washington, D.C. Board of Education, July 1970.

9. The Takoma Charette is an example. Almost four years transpired between the event and the actual commitment to proceed with the school that evolved in the charette.

10. Lawrence Halprin and Associates, <u>Take Part</u>, 1972, n.p.

11. See Lawrence Halprin, <u>The RSVP Cycles</u>, New York, Brazilia, 1969.

12. Halprin and Associates, <u>Op.cit.</u>, n.p.

13. Environmental Design Group, <u>The PAK Process</u>, 1971.

14. Environmental Design Group, <u>PAK - Planning Aid Kit</u>, 1973. The kit consists of manuals: "Introduction to PAK," "Staff Policy Planning Handbook," "Preplanning Handbook," and "Participants' Policy Planning Handbook."

Footnotes (continued)

15. Center for Environmental Structure, University Patterns, unpublished
     manuscript, 1973. Many of these principles and other examples are
     summarized in Christopher Alexander, The Timeless Way of Building,
     forthcoming.

16. See Alexander, et al., Houses Generated by Patterns, Berkeley, CES,
     1970.

17. Bernard P. Spring, Planning and Design Workbook for Community Parti-
     cipation, Princeton, Research Center for Urban and Environmental Plan-
     ning, 1969.

18. Lance Jay Brown and Dorothy E. Whiteman, Planning and Design Workbook
     for Community Participation: An Evaluation Report, Princeton Univer-
     sity, 1973.

19. For a complete description of the procedures used in the Cambridgeport
     Ecologue Process, see Philip B. Herr, et al., Ecologue/Cambridgeport
     Project, Final Report, M.I.T., December 1972.

AN AGENDA FOR EXPERIMENTATION

The ultimate test of programming techniques is the degree to which they enable insights about environments to be generated and adopted through the decisions on what to build or change. Techniques are not useful if they become empty rituals; the emphasis must be on constant experimentation to find better ways of working.

The preceding chapters are an amalgram of speculation and usually one-of-a-kind experiences. Much of what is said in them remains to be tested, and many experiments are suggested throughout the text. But, it is worth risking some judgements about where to begin, since most projects can afford innovation in only a few areas.

I believe that six areas of experimentation are among the most crucial:

1. The central hypothesis, that most programming revolves about four spheres of definition -- resolving packages, patterns, performance standards and clientship -- remains to be checked. Moreover, the hunch that there is value in deliberately parcelling activities into these four areas of concern requires scrutiny. By doing so, there is the risk that the process may become cumbersome and that important insights might be lost through parcelling. These must be balanced against the virtue of consistent information. A posteri explanation is not always the best process for illuminating useful directions; in this case it requires the test of trial.

2. An important question is where the programmatic intelligence function might best reside. Clearly, a separate unit which accumulates

knowledge in verbal and graphic form, which is the thrust of what has been outlined here, is one option for many organizations, whether they are small architectural firms or are institutions. But there are also other arrangements. Skill pools of individuals who continually develop their "expertise" in particular substantive areas and the joining of environmental programming with more traditional fields of management are two such possibilities. Every organization ought to experiment with the structural arrangements which facilitate learning and responsiveness.

3. Information which can inform package decisions that is socially or psychologically rooted, rather than tied directly to economics, is badly lacking. To cite one example, in the planning of new communities which aim to be socially integrated, almost nothing is known about the thresholds required to enable meaningful social relationships to develop. What is the minimum number of elderly to guard against the feeling of social isolation? How many children are required, and within what radius, to offer opportunities for a range of friendships to occur? And so on. The dominance of economics in package decisions is almost directly attributable to the fact that so little is known about other determinants that they are customarily dismissed. These areas ought to have the highest priority for research.

4. Alternatives to behavioral observation -- including the probing of metaphors and the creative use of precedents -- need experimentation to provide new bases for describing environmental patterns. The atomistic quality of current pattern languages may well be self defeating -- the more that is known and recorded, the more difficult it is to synthesize a design. Higher level languages may provide avenues out of

this dilemma.

5. Many issues remain to be explored in the area of performance specification, since the state-of-the-art in this area is highly primitive. Two are: in the context of buildings, is it possible to begin during initial programming a process of dealing in performance terms which leads directly to acquisition specifications, or is it more reasonable to use separate formats for early and later descriptions; in the context of environmental legislation, can human activities and values ever be predictable to the degree necessary to replace current forms of standards with performance standards? Most of all, what is needed in this area is experiments to probe how much of a program can be described through performance guidelines.

6. On the issue of scenarios, an important question is how to validate a priori projections -- how to be sure the users and use relationships projected for a place are real possibilities, not simply convenient myths. Experiments which attempt to probe designers and users projective facilities, and which compare them, would be extremely useful.

APPENDICES

APPENDIX I - A GLOSSARY OF CONCEPTS FOR PACKAGE ANALYSIS

Adaptability. Intuitively, it implies the degree to which an environ-
ment is changeable, within a predictable range of possible uses. But it
is difficult to quantify and, hence, adaptability levels are difficult
to specify or consider in terms of trade-offs with initial costs. One
comparative measure might be the discounted value of expected future
renovation costs. If they are above increased initial expenditures which
would enable the environment to be adapted at no cost, the expenditures
might be justified. However, adaptability also has psychological and
social costs and these are less easy to pinpoint.

Benefit-Cost Ratio. The fraction of overall benefits over costs, when
both are measured in commensurate terms.

Break-even Point. Has several meanings, but usually implies the number
of years before annual revenues will exceed annual costs. Alternatively,
it may imply the number of years before the initial investment is re-
couped.

Cash Flow. A form of analysis which identifies the acutal cash on hand
at any stage during the life of a project. This usually consists of a
year-by-year breakdown of costs and revenues indicating the difference
at the end of each year and the net amount of cash available at the start
of each successive year. If a project is to lose money during its early
years, a cash flow analysis will reveal the investment necessary at the
outset to ensure that costs can be covered until the revenues begin to
exceed the costs. This is sometimes called the "front-end investment."

Critical Path Method (CPM). A system of modelling activities over time
with respect to the completion of a project. It identifies the critical
path for least-time completion and, thus, serves as a management tool
to ensure that a schedule is being met.

Debt Service. Annual payments required to pay interest on a mortgage,
bond, or loan, together with payments required to retire the debt over
a fixed period.

Depreciation. The amount by which a building or other real property is
estimated to decrease in value each year, given an assumption (usually
for tax purposes) of its expected life. There are various formulas for
computing depreciation; the simplest is the straight line method. For
example, if a building has an expected life of 40 years with no salvage

value, the annual depreciation rate would be 2.5%. Its <u>depreciated value</u> would decrease by that amount each year; after 40 years, it would be worth nothing. Buildings depreciate; the land they are built upon generally does not, and is considered to have a <u>residual value.</u>

<u>Discounted Value</u>. The present value of an investment, which will provide monetary returns in the future. This is a function of the discount rate (the net return expected on an investment), the size of future payments, and their timing. For example, with a discount rate of 10%, the present value of $100 to be paid annually at the end of each of the next five years would be:

1st year payment worth approx.				$91
2nd "	"	"	"	83
3rd "	"	"	"	75
4th "	"	"	"	68
5th "	"	"	"	62
Discounted (present) value				$379

A convenient way of thinking about the discounted value is that it is the opposite of a savings account, where value accumulates as annual deposits are made and interest is added. The discounted is important in computing the mortgage value of property, hence it gives an important indication of how much equity will be required and what building cost can be afforded on a revenue-producing property. Lending institutions or mortgage bankers decide upon the discount rate through a complex set of calculations balancing risk, long-term yields, and alternative investment opportunities.

<u>Equity</u>. The unmortgaged value of a development. Initially, it represents the difference between construction costs and mortgage value. Over time this will increase as the loan principal is paid back, and may increase or decrease dependig upon the market value of the property. The annual <u>rate of return</u> is generally computed based on current equity.

<u>Externalities</u>. Costs which are shifted to other parties, as a result of a facility. For example, added traffic on city streets may not show on a developer's balance sheet, but would be reflected in a larger social account.

<u>Maintenance Costs</u>. Expenditures required for maintenance activities aimed at preserving the value of a structure; e.g., repair and occasional replacement of materials which wear out before the expected life of the building, such as carpet or wall materials. Usually a fixed annual allowance is set aside, in the form of a sinking fund, to be drawn upon as maintenance is warranted.

Operating Costs. Out of pocket outlays for heat, light, insurance, rental agents, janitorial services, routine expendable items, etc. Usually these vary somewhat depending upon conditions of occupancy.

Planning Modules. The smallest spatial unit, from an operational standpoint, that should be considered the building-block of a package. It may be scaled to a particular facility (e.g., number of families required to support an elementary school of optimal size), to a characteristic of the market (e.g., commonly sought rental packages) or directly to management organization (e.g., the minimum number of rooms to justify the fixed management costs of a hotel). By definition, a module may be multiplied, but not subdivided.

Program Evaluation Review Technique (PERT). A technique for disaggregating a complex program into elements, to each of which can be attributed goals in a measurable form. It aids in reviewing progress of a project.

Shadow Pricing. An indirect technique for computing the value of a facility by comparing conditions with and without the facility. For example, the benefits of a student housing complex might include the differential in community rents with and without the facility.

Substitutions. Often space and activity programs have built-in possibilities for substitution. In the classroom example cited under "utilization ratios" below, for example, more students might be accommodated by changing programs of activities to result in a greater U.R., or by adding more space. A measure of marginal capacity (max. U.R. - actual U.R.) is one index of the possible substitutions.

Thresholds. Points of discontinuity in the ability to support a scale of environment, above which a particular service is possible, below which it is not. For example, below a certain size of development, the addition of new infrastructure in the form of roads or sewers may not be justified, because facilities are not infinitely variable.

Utilization Ratios. The average rate of occupancy or use of an environment compared to its capacity. For example, a classroom building with a U.R. of .5 might mean that it is occupied half of the hours during which classes are scheduled. Or, measured more carefully, it might mean that, for a typical week:

$$\frac{\text{actual number of students using classroom}}{\text{number of scheduled class periods x capacity}} = .5$$

Many facilities have maximum U.R.'s, based on the logistics of their operation. For example, a parking structure (depending on its design) might have a maximum U.R. of .85.

APPENDIX II: <u>LIVING IN CHANDLER VILLAGE: A SCENARIO</u>

Jody Gibbs is imagined to be a junior at the college, expecting to major in education and become a primary school teacher. She spent her high school years in Islip, Long Island, achieved mediocre grades, attended a local junior college for a year until she became dissatisfied with living at home, then chose Worcester from among three or four smaller State Colleges she had visited before graduating from high school. Among the reasons for coming to this college were: that she could live on campus in what promised to be an interesting housing area; that it was far enough away from home to represent a break, but near enough to return on a long weekend; that the college's education programs promised the chance to develop solid competence in teaching. She is 20 years of age, has one younger brother and an older sister. Her father works with a distributor for a national appliance manufacturer; the family's income is about $15,000 per year. Jody's day:

That girl's incorrigible. The radio must go on before she opens her eyes—the same rock beat every morning. At least I've learned to sleep through it until she clears the bathroom. And she's learned to close my door when she passes by: slouch-slouch, slouch-slouch. Someday I'll destroy those slippers!

Twenty-five minutes later Jody Gibbs languished on the edge of her bed in her still-darkened room, aware that she was next in line for the morning pilgrimage to the bathroom. She surveyed the outlines of the past evening's good intentions: two reference books on teaching reading and a third-grade text unopened on her desk, an ashtray of Christine's cigarette butts on the floor in the corner, jeans and a black turtleneck sweater draped over the formed plastic chair that had never made it to the desk the previous evening. Barefoot, she opened her door and turned left towards the bathroom at the end of the short corridor. A quick glance acknowledged the existence of Joan, fumbling with the toaster in

the kitchenette and Cynthia, of slipper fame, balancing a spoon of breakfast cereal towards her mouth while absorbed in the magazine before her. A third roommate, Lisa, could not be expected until later. Music continued to spill out of Joan's room as she passed.

-You can never tell what it'll be like living with people until you actually try. Joan and I lived together last year in the bullpen. We had no choice, since both of us were new at the college and we were thrown in with six others in a big unit over near the entrance to Chandler Village. What an experience! Thank God I had a meal pass, since trying to get that number together to do anything was like trying to organize a circus. By the end of the year, we all kept our food in our rooms, since you couldn't trust anyone, especially the two dozen guys who were constantly squatting in our place, along with any other places that would have them. This year, at least, we don't run a revolving door. While we don't spend much time hastling it, we seem to have made our peace about hours and taking turns to keep the place running. At least all of us are pretty neat, even Cynthia, who was Joan's friend last year. But, God, does she have to be so enthusiastic about everything? Now it's Halloween--and her contribution is a four-foot stuffed scarecrow, beer-bottle in hand, lounging across the end table in the corner by the window, so it can be seen by everyone who passes by. Joan's a good head and we do a lot of things together. She has a great way with kids in the classroom; she just smiles and they come running, asking for "Miss Partridge". We don't see much of Lisa, she's wrapped

up with Ted, her friend, and they keep pretty much to themselves. Me?
I guess the other girls think I'm a little too straight, or maybe dull,
and I guess I am. It'd help if I really knew where I was headed, or if
I had the guts to just pitch all this teaching stuff and live it up for
awhile. Maybe in the spring!

Jody glanced at her watch as she emerged from the bathroom.
"Christ, it's nine-twenty already," she murmured. "Joanie, pour me a
cup, I'm running on my normal. . ."

"Aren't you going to mod-ren instruction this morning, Jod," Cynthia
interjected.

"Cut it, Cyn, you know what happens for the first half of that class."

Jody's pace quickened. The blinds flew open. A well-worn turtleneck
was chosen from a rack of Villager clothes, her mother's taste, which
seldom saw the light of day. Fully dressed, shortly Jody was perched at
the kitchen counter sipping a cup of coffee and fumbling through a nearly
empty box of day-old donuts. Looking across the living room, and out
the large window, small knots of students could be seen outside moving
towards the classroom area of the campus. Jody's apartment was located
on the second level, which seemed ideal, since it was close enough to the
ground to observe people coming and going, but not so close that every
passerby couldn't resist a look in. Cynthia, a light jacket over her
shoulders, was going out the door, her usual cheery salutation wafted
behind her. Jody mugged her spirited housemate, which brought a smile

from Joan, who was now on the sofa, leafing through a magazine. The

conversations of others leaving for classes were dimly audible in the

hallway which the four girls shared with seven other living groups.

"Are we really going to have a Halloween open house, Joan? I mean, the

guys across the hall said they're having one, and you know what kind of

company that'll bring. Maybe we should just freeload on them."

"You wouldn't like to see this scarecrow go to waste, would you?"

"Let's talk about it at supper, eh?"

At 9:35, Jody made her way down the flight of stairs from her unit to

the street along which most of the housing was located. A glance upward

revealed that most of the blinds were open in the living rooms of other

units and that the slogans, house names and other works of window art

still announced their residents to the street. The numbers moving to-

wards class had thinned, but Jody noted a classmate a few yards ahead.

"Fred, you also can't miss Professor Lekburg's sermonette?"

He turned, and in a few quick paces she was even with him. The conver-

sation wandered from the advantages of coming late for the morning "Mod-

ern Instruction" class ("She looks at her watch when latecomers arrive

and realizes how long she has rambled on") to the thought that early

morning classes ought to be spiced with audio-video aids so that you can

continue your slumber when the room was darkened, to the fact that an

education student's day was so cut up that much of it gets spent walking

to and from the housing, to Fred's oblique comment that all that would
be solved by spending more time in the field. All the while, the two
walked apace towards the anonymous three-story brick structure, one of
a line along Chandler Street, this one dubbed the Education "Center".
Past the Learning Resources "Center", they navigated across an ocean of
commuters' parked cars ("That's what separates us from a real college,"
Jody had often thought), and in a rear fire door which had, for all pur-
poses, become the main entrance to the building. Equally unconsciously,
they moved down a buff ceramic-glazed corridor up a flight of stairs,
along a second floor corridor with chequered floor tiles, now absorbed
in a dialogue about whether the May or Chandler school was a better loca-
tion for next semester's practice teaching. The metal classroom door
was opened cautiously and both found seats near the back.

". . . one of the most difficult problems you will face as teachers is
how to integrate the special events you will plan for your classes with
your day-to-day lesson plans--and I hope you will always remember to..."

-Sometimes I wonder whether it's possible to learn anything in the ab-
stract about teaching. Hell, what do I know about kids? This stuff
simply washes over my head. When I see those kids playing at recess at
Chandler, I think, "Wow, I think I could do some good for them." I mean,
what they need is somebody to work with them quietly in a one-to-one
way and make them feel they can actually do something. All those kids
are going to be sitting in these desks someday, trying to figure out

what to do with their lives and they've all got mothers at home telling them "do this" or "do that". So instead, they're all trying to please the teacher--thank God I'm out of that rut. But I'm still sitting here.

10:30. An hour to kill before her next class. That could have been solved had she taken "Math in Elementary School" rather than waiting until next year, but her natural dislike of math and her desire to try an art course had meant a break in the normally smooth-flowing schedule. Jody strikes up a conversation with a classmate, one of the few commuters who are both a name and a face. They talk as they wander down the corridor, now filled with students moving between classes.

"What do you know about the equestrian--er, riding club? I mean, I've never tried it, but it sounds like it could be a lark. Do they meet on weekends. . .?"

"You know John Sisti? He's the guy who's always mouthing off about the difference between slum kids and suburbanites. He does it. He went to my high school, but I don't think he rode then, so you must be able to pick it up from scratch. Anyhow, you know what they say about the horse's mouth. . ."

"Well, I was thinking, it might be a way to break the boredom around this place when everybody blows for the weekend."

"I've never tried it, but somebody around the Student Activities office should know something about it. Our student fees must go for something. Let me know what you find out. . . ."

Her friend paused slightly at the door to her next class, a quick in-
flection said goodbye, and Jody continued along the corridor, down the
stairs at the end and out the side door. It was a glorious day, but
she continued outside only the few steps to the next building, then
through half its distance to an abandoned classroom which now served as
the Student Lounge. Naugahide-covered tubular furniture lined three
sides. On the fourth, a battery of vending machines were taking their
daily licks from disappointed suitors. The glare from the windows made
it difficult to recognize people as she entered, but Cynthia's voice
was unmistakable and Jody ambled over to her group, who were engaged in
a conversation about the vicissitudes of attempting to organize a campus
Halloween party.

"How about a cancer stick?" Jody asked the gaunt, long-haired fellow
standing at the outer edges of the circle, cigarette in hand. He'd
heard the request before, and this time it prompted a sigh, but a package
was produced from a windblazer pocket. "I'm trying to wean myself, you
know."

After a minute or so of small talk, she made her way to the coffee
machine, acknowledging several familiar forms along the way. But most
of the crowd were commuters, names and faces she had seen but never
known. Their friendships seemed to have more to do with what schools
they attended before college than present circumstances. Her mind
wandered back to her freshman year on Long Island.

-When you're a commuter you don't sit, just stand. You're on your way and either you like it or you don't, but you keep going. These kids don't know what they are missing by staying at home. They're always the first to buy college sweaters and jackets--that's the way they remind their high school buddies they've gone on to college. But at five o'clock, they're home, the guys are raking leaves, the girls are talking to their old lady about some shower or something. But I shouldn't be smug. What am I doing here shifting from foot to foot?

With which thought she tossed her empty coffee cup in a cannister and headed out. "Almost eleven", she mentally noted. What to make of the half-hour before her next class. She turned towards her apartment, across the parking lot, this time walking on the grass along the row of trees that had escaped the bulldozer's efforts to expand the college by making room for more cars. A few others had found this tiny respite and were propped against trees or chatting quietly with friends. Enjoying the warm sun, she decided not to head back home, but to try to make a dent on one of the reference books that had been her companion for the past day and a half. Up onto the terrace of the Learning Resources Center, lined by students warming in the morning sun. Twenty pages later, she began the circuit again, off to "Reading in Elementary Schools," second floor, yes, two doors down from the scene of "Lekburg's lecturettes." Five minutes late and a seat near the rear. With no credit to aforethought, the twenty pages were apropos and Jody left the class feeling good about having grasped the teacher's point--it wasn't

always that way. Stepping lightly, she began the jaunt back to her
apartment for lunch.

-Sometimes I feel good about living on campus, sometimes I wish I lived
on a normal street in the city, in a normal house. God knows, it's a
pretty narrow slice of life you find here. There are even two girls
for every guy and it must be higher in the housing. The way they clus-
ter around every available male body sitting on those concrete walls at
the edge of the housing! Who needs it? They're right across the hall,
anyway, and they think they ought to have a standing invitation into
every woman's suite. That's a thought--I wonder whether today's mail is
in yet.

As she enters the housing area, Jody stops to talk to Lisa and
Ted, occupying their usual outdoor encampment on the grass at the corner
of the low concrete wall. "Ted, did you tell me you saw Steve from last
year?"

"Yep, Yamaha and all. This year he's found a place where he can actu--
ally take the damned thing up into his room."

"I don't miss the bike, but I wouldn't mind seeing him around. People
who are quietly mad are a welcome relief from those who want the whole
world to join their games, eh, Lisa? Say, do you know if the mail's in
yet?"

"The truck came by twenty minutes ago, but I don't know if it's sorted."

"I'll see."

—God, how you come to depend upon mail when you're living in this out-
post. John's letters have been tapering off since he was up here last.
I don't know why, but I guess we've both changed a lot since frosh year.
And, what the hell, it was either him and live at home, or here. We
never were that tight. But now, even Mom's letters about the church
circle, and the geraniums and how everybody always says to "say hello
to you" are a welcome sight. What? Nothing?"

"Norm, have you sorted it all?" she shouted through the mail box.

"No, I'm only halfway through."

"Can you look for mine?"

"Christ, Jody, if I looked for everyone's. . . drop back in half an
hour."

"Scrug!"

A few more familiar people had stopped to talk along the street.
A nod to one, a few words to another, a message to Ted and Lisa that
the mail was still being sorted and finally up the steps to her apart-
ment. She was greeted by a not unpleasant aroma of something cooking,
which turned out to be a grilled cheese sandwich, looking lonely on the
teflon-coated electric fry pan.

"Should I throw one on for you?" came Joan's voice out of the kitchen-ette.

"There's soup in the pan."

"Joan, your motherly love is showing. Sure. I'll help. Just a sec."

After a quick trip to her bedroom to deposit books and a jacket, Jody began busily collecting plates and cutlery. "Isn't Cynthia back? Wait, no need to ask--no radio blaring."

"Today's her day for the drama club lunch, I think."

"Listen, we've really got to get her off this open house shit. You know, the place will be a shambles."

After thirty minutes of lunch and relaxed conversation, the dishes were washed and stacked and Jody made her way back into her room, her conscience now nagging her to continue with the morning's reading and to try to come to grips with a required theme for Modern Instruction. She propped herself upright with two pillows and sat lounging on her bed, book in hand. The pages slipped by effortlessly until she discovered that she was reading but not remembering a thing. Her eyes focused on the open area outside her window. "The mail," she whispered, with a start. The next moment she was off for a second pass at Aquarius. A lone college life insurance brocure. "That's exactly what I need--a college life," she thought. A glance into the laundry room found it

occupied with students getting an early start on the weekend, and dashed the vague notion that she might spend the next hour doing the same. "No, I've got to get going on that theme."

Thirty minutes of scribbling, leafing through books, picking up and setting down magazines, and staring, feet up, at the posters on the wall above her desk, had netted two themes: "A critique of team teaching in elementary education," and "Considerations in the use of television in the classroom." Both fell well short of igniting enthusiasm, but an outline was beginning to emerge for the first, and that was better than when she started. Her watch offered a reprieve: it was time to get into motion for her final class of the day.

At three twenty-five, Jody was again back at the classroom building, remarkably, five minutes early for Principles of Ecology. The course, really mislabeled, consisted of a series of four weekend field-trips to observe the succession of plan communities in undeveloped areas. Once-weekly classes turned into de-briefing sessions and lengthy explorations of slides taken on the trips. It was something of the high-point of the semester for Jody, for reasons she did not clearly understand. The field trips offered a low-pressure immersion in the subject, good company and a concreteness of experiences. She could take the course for interest's sake alone, a welcome escape from thoughts about majors and careers. As she began her final trek back to her living unit, she thought about the subject.

-There's something neat about the way it all just happens--one plant community following the other when conditions are just right; tell me the kind of soil, topographical location, water table, and I'll tell you the way it'll end up. Wow! No decisions. That life should be so simple.

The daily frisbee games were in full swing as she turned the corner onto the Chandler Village street. Mainly regulars. Guys and a few girls spinning three frisbees in syncopated motion. A cadre of spectators lining the low walls bordering the street. Others leaning out of open windows above, carrying on a dual conversation with people inside and out. Two quick steps and Jody avoided the arc of a floating disc. She paused for a moment or two, then skipped up the steps, up the flight to her apartment. Her earlier thoughts of confronting the open house issue had mellowed. Cynthia and Lisa, half-turned, were watching the old Perry Mason serial, nearing the end, from the dispirited look on Burger's face. "What, no radio accompaniment?" she thought. "Time to hold my peace." Jody passed silently along the corridor to her room. After a few minutes of compulsive tidying, she emerged, to the accompaniment of the McDonalds' All-American Hamburger Anthem.

"A Portugese luau, you say, Lisa?" Jody quipped, as she passed the kitchen on her way to the side-chair Lisa had abandoned. Thursdays were Lisa's night to cook, the outcome of a process so complex that nobody could remember how it began. Four girls and five nights, plus weekends when they were there. Joan with late classes on two nights. Cynthia

with drama rehearsal one night. Lisa's weekends with Ted that sometimes began on Friday, other times extended through Monday, depending upon the state of their relationship and how many of his roommates were boarding elsewhere. In any case, it had worked itself out and the schedule now seemed stable.

"No, I had in mind fried string beans with catsup, just so that our stomachs wouldn't have to adjust too much from last night's treasure, which you produced." Smiles all around.

"You'll have to admit that last night's dish wasn't exactly out of the White House Cookbook," Cynthia remarked from behind the broad expanse of a local newspaper. "I take that back--here it is. Yep. . . listen to this. . .'and Julie Nixon Eisenhower hosted a buffet luncheon for the ten regional finalists of the Miss Harvest Moon festival. The table d'hotel --get that--featured favorite dishes from each region, utilizing native fall produce'. . . .Oh, God, I can hardly finish. . .'Each finalist gave a brief description. . .'" Uproarious laughter set the tone for the following half hour. No story on the local or national news passed withour rejoinder. Near seven, Joan returned, taken aback somewhat by the rolling laughter that was clearly audible in the building hallway. Dinner was ready and the four assumed their routine positions around the table.

By contrast, scarcely a word flowed for over ten minutes until Cynthia began her predictable pep talk, as usual, with deep sighs about

the apathy at the college. This evening's edition centered on how great
it would be if a huge screen could be raised at the end of Chandler
Village street for outdoor movies. A quick spurt took her to the living
room window. "See, the projector could be put over in Smylie's living
room--they're a bunch of exhibitionists, anyway. They'd be showing
X-rated flicks. That'd keep the commuters around in the evenings. All
those repressed little kids who have never left home. . ."

"Come off it, Cyn. Where do you get these hair-brained ideas?" Jody
carped, her back still turned to Cynthia's window pyrotechnics.

"Don't bite, old girl, I'm not serious. But we've got to find some
ways to relieve the boredom of this place."

"Well, count me out--and count this place out if you're still thinking
about staging a freak show here next week."

"What's eating you, Jod? Give me a couple of days and I'll have an
equally hair-brained idea about how we can have our party and old Jod. .
. wo-n't. . .even. . .kno-ow. . .it's. . .happening. It's Halloween,
you know."
"I bet."

With that, the subject was dropped, dishes were stacked and each
of the four set out on their separate rounds. Jody was in no mood to
stick around the place. Books in hand, she headed for the college li-
brary--"Learning Resources Center," that is.

-The place changes completely from day to evening. It's not as quiet, but certainly more peaceful. There must be a hundred stereos, radios, and TVs playing, but they're all muted and you can still hear footsteps here on the street and the dim voices of people in conversation passing by. I love the warm glow of all those picture windows with draperies drawn, the low globe lights along the street, the way the sidewalk tables of the coffee house bustle with animation. People sitting on the steps of the laundry, chatting in the cool evening breeze. The path's well lit to the library; it seems longer at night, but I don't mind because there's a constant stream along the way. At night, the rest of the campus doesn't exist, except maybe the gymnasium, but you have to make a special trip there.

Ten o'clock; library closing time. It was a productive evening. Jody had browsed through a book on ecology, finished the theme outline and even managed to scratch together a score of quotations that ought to fit somewhere in it. On her way back, she wandered over to the coffee shop and spent a pleasurable half-hour with friends from the previous year. Another "cancer stick". Back to her apartment.

With a few more places like Smylie's, where they never close their drapes, we wouldn't need X-rated movies on the wide screen.

APPENDIX III: DIFFERING CONCEPTIONS OF IDEAL ENVIRONMENTS

There is an important gap in theory about how individuals, independently or as members of a class, might differ in their preferences for, or dispositions towards, the settings that are to be designed on their behalf. To a programmer, often a crucial issue is deciding upon the best index of differences, to allow participants to be sought for an outreach process with some assurance that no important viewpoints have been neglected. Simply observing how people now live or work or play is an inadequate barometer: we have no guarantee that current patterns represent what they would choose, if all the choices were open to them. And in an environmental design project the choices of departing from current routines often is or ought to be open for consideration. A more fruitful index of differences might be the idealized worlds which people construct out of everyday experience. This Appendix consists of an analysis of people's conceptions of ideal residential environments, aimed at informing the question of what constitutes the most reliable index of environmental dispositions.

I

Cognitive representation provides one means for surfacing for inspection and comparison the inner environmental constructs of individuals.[1] The theory is that, through experience, individuals develop knowledge about the external world, store this in their minds in some coded form, and draw upon it for everyday functions which depend upon

the predictability of environmental circumstances.[2] Some of this know-

ledge may be inferred by observing an individual's actions, and large

blocks may be revealed when he is asked to describe a particular setting.

Where the issues are spatial or qualitative, asking a person to draw a

map of his environment may reveal important affective dimensions of his

understanding.

Cognitive representation has been widely used as a research tech-

nique.[3] A large body of literature reports on the congruence between

knowledge, as measured by the maps people draw of their environments,

and behavior, as measured by the way this knowledge is used in day-to-day

routines. Much of the work has centered on questions of geographic ori-

entation,[4] strategies for finding one's way through environments,[5] the

mental schema used to structure one's spatial domain,[6] and how one learns

about environments.[7] A common thread which runs through all of these

studies is the notion that a well-designed environment is able to be

understood easily by its users ("legible" is Lynch's term), hence the

emphasis on the congruence between inner representation and the external

world. By comparing a cognitive map with the actual environment gaps

of knowledge may be revealed. Where these are critical to everyday

behavior, it may suggest the need for either environmental education[8]

or changes to the environment itself.[9] The emphasis is on predictability,

as Stephen Kaplan puts it:

> Thus from an adaptive point of view, there seems to be
> a strong argument for efficient perception, that is, for identi-
> fying the current situation in a way that capitalizes on past
> regularities and requires only a relatively small amount of
> information out of the diverse and uncertain environment. It
> not only seems reasonable that perception should operate in this

way; the evidence indicates that it does...One cannot be overly
tolerant of ambiguity and expect to survive in a dangerous world.
As Bruner has pointed out, organisms often cannot afford the
luxury of a second look. 10

A subtle, but at least partly mistaken, inference that is often
drawn from cognitive representation studies is that people value what
is, to them, familiar. It is true in the sense that routine function-
ing forces one to depend upon the stability of things in one's surround-
ings--to have to rediscover the world each morning would place intolerable
burdens on the psyche. But it is also true that, given a clean slate,
many people would choose to arrange their world quite differently from
how they find it. In a study of ghetto youths from Roxbury, Florence
Ladd found that there was little relationship between what she inferred
they valued from their use of their present environment and what they
said ought to be included in an ideal environment, the latter being
closer to a typical green suburb than the inner city area they in-
habited.[11] Many other examples come to mind: suburban kids leave home
and move to inner city areas; die-hardened city folks retire in a small
town; after many years of commuting a family moves to a townhouse in
the city.

Not everyone has the ability to choose what they would prefer and
certainly many repeatedly select what is familiar rather than face the
necessity to adapt to a new setting. For example, executive families
who are perpetually on the move often look for similar housing in suc-
cessive communities. But the knowledge about, and the desirability of,
an environment may be only loosely related. Any project which aims at

environmental change must pay attention to both.

The question of how individuals acquire notions of desirable environments has received much less attention than the subject of how they adapt to the circumstances in which they find themselves. Certainly experience plays a role, but it may be less compelling than a variety of secondhand sources: television, the printed media, movies, what they hear others describing. Ideal environments almost surely are closely connected to self-conceptions--how individuals would like to be thought of by their significant-others. And they may also be idealized environments. Just as dreams are often the playing out of fantasies that are the opposite of reality, the ideal setting may be the antidote which allows us to persist with actualities. One study, for example, comparing current time budgets of city residents with how they would like to spend their time, found that many simply dropped time for travel out of their agenda completely.[12] Not a real possiblity, but it may make hours behind the wheel more palatable.

In designing a new environment or planning for changes, the most pertinent question is often "what should it be like?" If this question is put to users for informatin or decision, the programmer wants some assurance that the full range of normative views will be surfaced, that important images of the future will not be overlooked or neglected. Thus part of the choice of who to consult or involve in a programming process must be based upon some understanding of how people might differ in answering the question of what an environment should be like. Cognitive representation can be an important tool in bringing these attitudes into play, but given a broad range of users of an environment, it can also inform the question of who to consult in the first place.

II

During the Ecologue project (see Chapter 9) a cross-section of residents of a Cambridge neighborhood were asked to make drawings of their present spatial domain and then of what they would consider to be an ideal neighborhood. Their instructions were, for the first, to "make a drawing of what you consider to be your neighborhood, noting on it places and things that are important to you." For the second, they were instructed to "draw what you would consider to be an ideal or perfect neighborhood, a place where you'd really like to live." They were told it could be as alike, or dissimilar to, the existing neighborhood as they felt appropriate, and that they were not to worry about its cost or whether or not it was realistic. About two hours were reserved for each drawing although participants generally used much less than that time. Since the conditions of the experiment were not tightly controlled—the drawings were intended for the participants' purposes in explaining to other residents how they felt, not specifically for the researcher—there was some variance in the time and attention devoted to the representations. But by observing the process of making drawings, these differences were judged to be within tolerable limits. The drawings have been analyzed in terms of both style and content, and what follows is an interpretation of the findings in terms of how one might predict the differences which the drawings revealed.

Ecologue participants were chosen to range across the characteristics of the Cambridgeport neighborhood and include all of the major groups in terms of race, sex, age, stage in life cycle, length of time living in

TABLE 8   COMPARISONS OF SUBJECTS DRAWING ENVIRONMENTAL MAPS

(Percentages)
(Missing data excluded)

INDEX		OVERALL PROGRAM	IDEAL NEIGHBOR- HOOD	EXISTING NEIGHBOR-. HOOD
Sex	Male	42.6	38.2	38.2
	Female	57.4	61.4	61.4
Race	White	66.2	68.4	68.2
	Non-white	33.8	31.6	31.8
Age	≤ 20	24.3	31.5	31.8
	21-30	18.9	21.1	18.2
	31-45	25.7	28.1	36.4
	46-60	10.8	12.3	7.8
	> 60		7.0	7.8
Length of Residence	< 1	8.8	8.6	9.1
	1-5	17.6	20.7	15.9
	5-10	25.0	22.4	27.3
	10+	27.9	32.8	22.7
	Always	20.6	15.5	25.0
Occupation	Retired	4.5	3.6	4.5
	Manufacturing Operative	13.4	10.7	15.9
	Services or Community	13.4	8.9	4.5
	Office/Clerical	6.0	7.1	4.5
	Housewife	14.9	16.1	20.5
	Student	35.8	39.3	34.1
	Teaching or Nursing	4.5	5.4	6.8
	Professional or Manager	7.5	8.9	9.1
Home-Ownership	Personal Owner	14.9	14.3	13.6
	Family Owner	34.3	35.7	38.6
	Rent	50.7	50.0	47.7
	n =	74	60	45

the neighborhood and home-ownership status. This analysis includes
some 45 participant maps of important features of their existing neigh-
borhood and 60 drawings of what they thought would be an ideal neighbor-
hood.[13] The maps were coded in terms of eight qualities which seemed to
describe the different ways that they varied:[14]

1. _Detail_. This measure describes how detailed individual's re-
presentations of existing and ideal environments were.[15] In the case
of existing neighborhood maps, the amount of detail was considered a re-
flection of the subjects' knowledge about the neighborhood,[16] and indi-
rectly, when coupled with length of residence, an index of use of the
neighborhood environment. It was hypothesized that detail would increase
as a function of length of residence and shift depending upon stage in
the life cycle (teens, housewives and fathers--high; elderly and highly
mobile younger middle-age persons--low).

For ideal maps, the amount of detail was thought to be a measure of
the degree of elaborateness (not simply specificity or concreteness) of
individual's image of a desirable environment. Individuals who describe
only a few attributes, it was hypothesized, do so because those greatly
outrank any other qualities in constituting a valued environment. At
the opposite extreme, those who include many objects and attributes may
do so becaue they have a richly embroidered image.

2. _Scale_. Scale was a measure of the extent, in geographic terms,
of an individual neighborhood.[17] In general, ideal maps tended to pre-
sent images that were much smaller (e.g., individual houses) or much
larger (e.g., whole cities or regions) than individual neighborhood des-
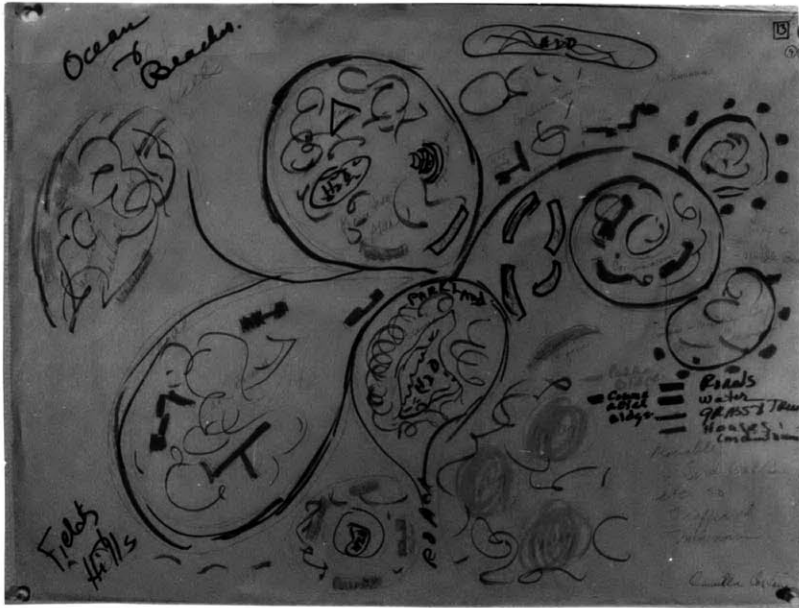criptions.
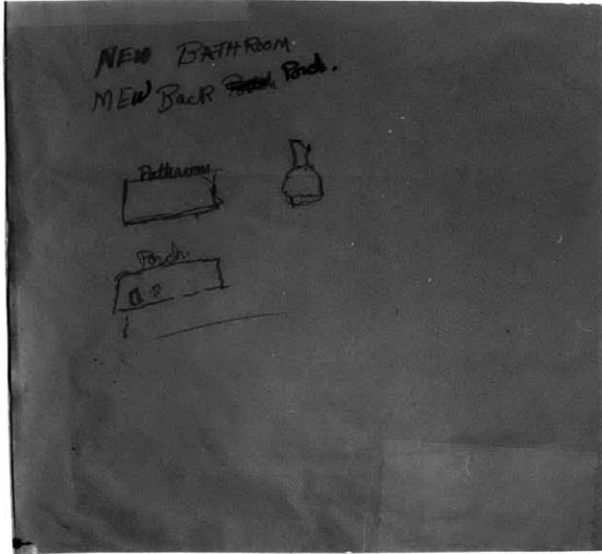
Low Detail

High Detail

FIGURE 22: EXAMPLES OF IDEAL NEIGHBORHOODS --
LOW AND HIGH DETAIL

SMALL SCALE

LARGE SCALE

FIGURE 23:   EXAMPLES OF IDEAL NEIGHBORHOODS --
            SMALL AND LARGE SCALE

Scale was thought to be one measure of local versus cosmopolitan conceptions of the city.[18] It was hypothesized that individuals with a tightly-knit, residence-based friendship pattern, whose standards for evaluating others are rooted in the direct experience of living with people over extended periods, or who are place-bound by reason of immobility or age (i.e., "locals") would seek and describe their existing neighborhoods to reflect this localism, while their opposites would prefer areas that were larger in scale. Thus, in comparing existing and ideal neighborhood drawings, a high degree of congruence was expected.

3. <u>Style of Representation</u>. The style of drawings of ideal environments seemed to fall into six distinct categories:

   a. <u>Verbal</u>. Several drawings consisted only of a series of words in either narrative or list form, describing the qualities of a desirable environment.

   b. <u>Diagrammatic</u>. Words again predominated, but a loose set of diagrammatic elements connected these to each other, sometimes providing the barebones of a spatial concept.

   c. <u>Plan-like</u>. A specific orthogonal spatial scheme predominated, often with labels identifying objects.

   d. <u>Pictoral plan</u>. These were plans with third-dimensional elements added, often the facades of buildings along a street.

   e. <u>Pictoral scene</u>. An iconic representation, often an aerial perspective, of a scene or area with definite spatial extent.

   f. <u>Symbolic</u>. Iconic elements loosely arranged with no regard to representing space. The objects were symbols of things rather than attempts to describe their likeness.
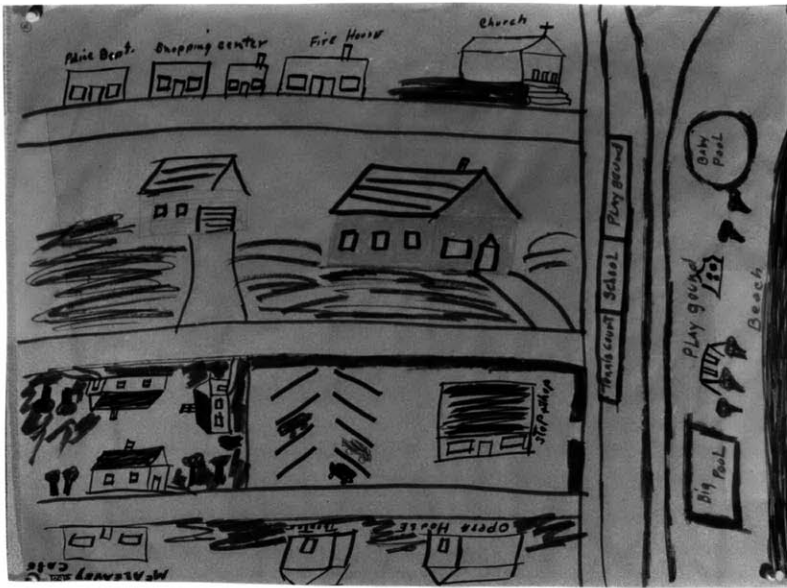
VERBAL

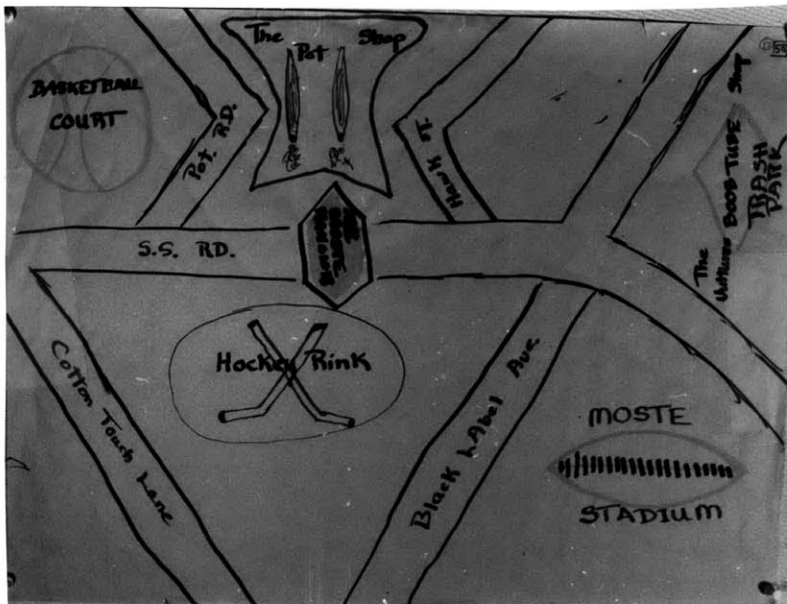DIAGRAMMATIC
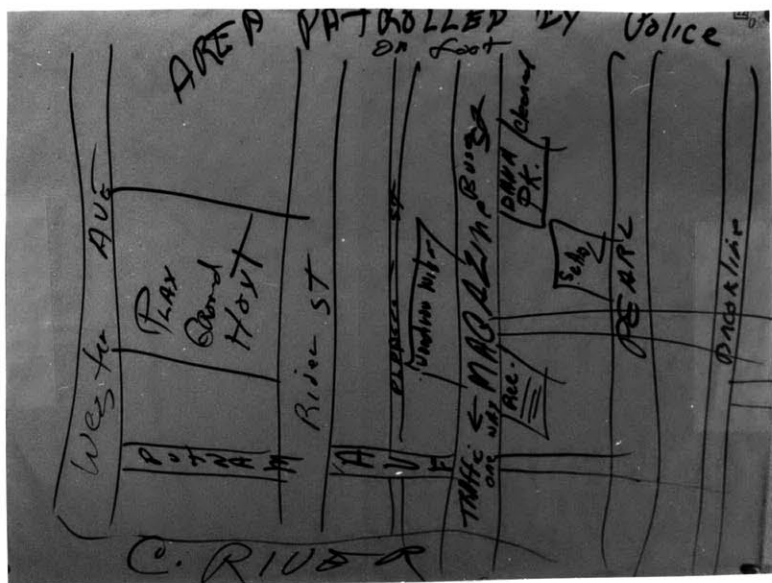
PLAN-LIKE

FIGURE 24A: REPRESENTATIONAL STYLES

PICTORAL PLAN

PICTORAL SCENE

SYMBOLIC

FIGURE 24B: REPRESENTATIONAL STYLES

Table 9 indicates the numbers and percentages of drawings which were
of each type for both existing and ideal neighborhoods. Plan-like
and pictoral plan representations predominate, and for obvious reasons
fewer of the existing neighborhood maps are done in other styles.

An important question is whether stylistic differences are due to
the representational capabilities of subjects or whether they reflect
differences in the way that they envision or think about environments.
Prior studies of representational modes offer slight evidence that
differences in conceptualization are partly responsible for the differ-
ent formats.[19] Florence Ladd, in a study in which black teenage kids
mapped their existing environment found four styles of representation
which she labelled "pictoral," "schematic," "resembles a map," and
"resembles a map with identifiable landmarks." These correspond to
my categories: respectively, pictoral scene, diagrammatic, plan-like,
and pictoral plan. She could find no significant relatinship to age,
grade level, or length of time at a residence, concluding:

> That nine (of 60) subjects drew pictures rather than
> more schematic, diagrammatic, or map-like configurations
> may reveal their level of understanding of the task, their
> inexperience with maps, and/or their individual abilities
> to conceptualize and represent space and spatial arrange-
> ments. There is nothing to suggest that the nine subjects
> differed from the rest of the sample with regard to their
> previous experience with maps since all the subjects are
> from similar socio-economic backgrounds and have attended
> schools that are similar in educational quality. It seems
> probable, however, that their understanding of the task,
> and ability to conceptualize and represent spatial relations
> influenced their production. 20

Appleyard, studying the ways that residents structured spatial relation-
ships in a new South American city, found it useful to distinguish

TABLE 9   <u>STYLES OF NEIGHBORHOOD MAPS</u>

STYLE	EXISTING NEIGHBORHOOD (percentage)	IDEAL NEIGHBORHOOD (percentage)
VERBAL ONLY	19.1	13.3
DIAGRAMMATIC	13.6	10.0
PLAN-LIKE	31.8	35.0
PICTORAL PLAN	34.1	30.0
PICTORAL SCENE	6.8	6.7
SYMBOLIC ONLY	4.5	5.0
n =	44	60

three styles: associational, topological, and positional. He inferred

that "the differences in the structuring of population groups appear

to be due more to cognitive differences, travel mode and familiarity

than to other personal variables."[21]

Appleyard's study, like Ladd's, dealt with an existing environment

to which representations could be compared for accuracy. But, working

with a clean slate in describing an ideal environment, it is not unrea-

sonable to hypothesize that cognitive differences may play an important

role in influencing the substance of conceptions as well as their style

of presentation. Certainly from my observations of individuals discus-

sing their proposals, it did not seem that they reflected simply what

they found easiest to draw; most seemed pleased with the images they pre-

sented. And despite an initial obligatory disclaimer, most also felt

they had represented it properly.

4. <u>Degree of change</u>. Ideal plans were grouped according to the de-

gree that they departed from the existing Cambridgeport neighborhood. They

seemed to fall into four categories:

     a. <u>Remedial changes</u>. The area was basically the same as the
        existing neighborhood, but small-scale changes (such as
        more trees, a new playground, a new housing development)
        were introduced.

     b. <u>Major changes</u>. The basic outline of the neighborhood re-
        mained (e.g., its size, boundaries) but the internal ar-
        rangement of things was significantly different.

     c. <u>A few references</u>. The neighborhood was very different from
        Cambridgeport, but a few places or features were trans-
        planted to the new area.

     d. <u>Totally different</u>. The neighborhood bore no resemblance
        and included no references to what existed (e.g., totally
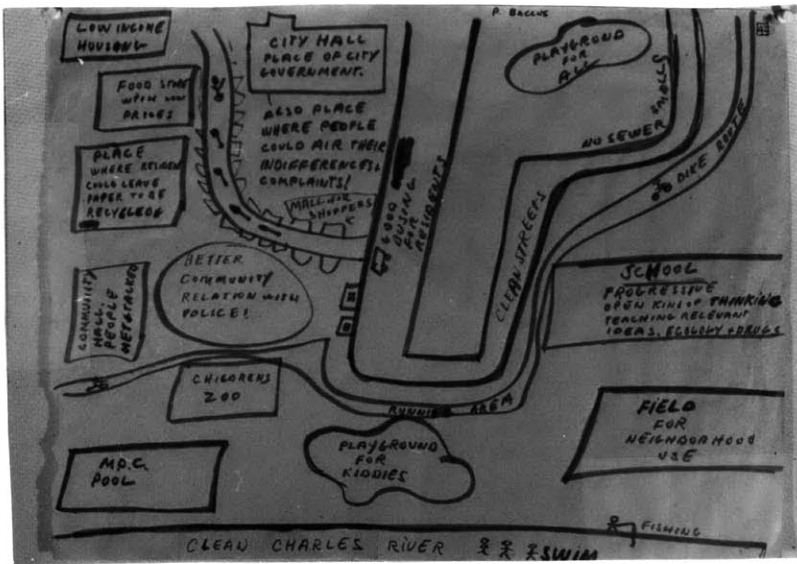   rural).
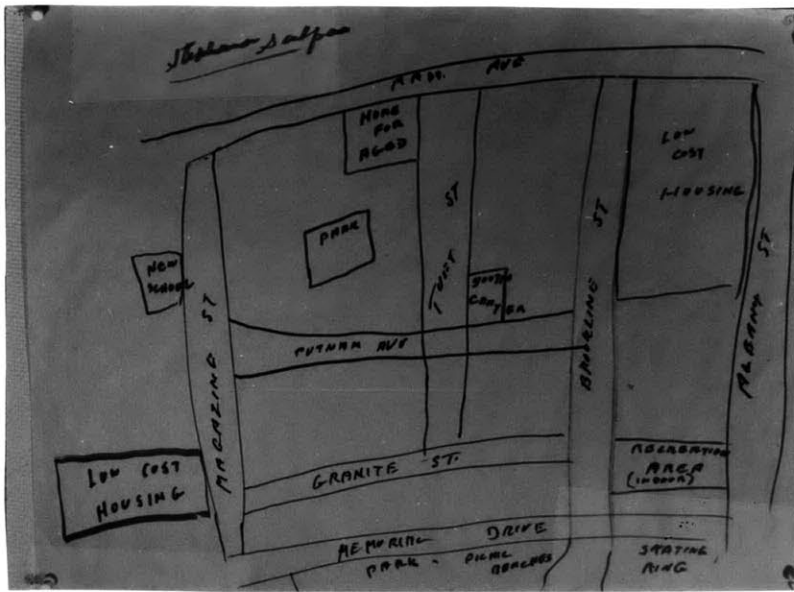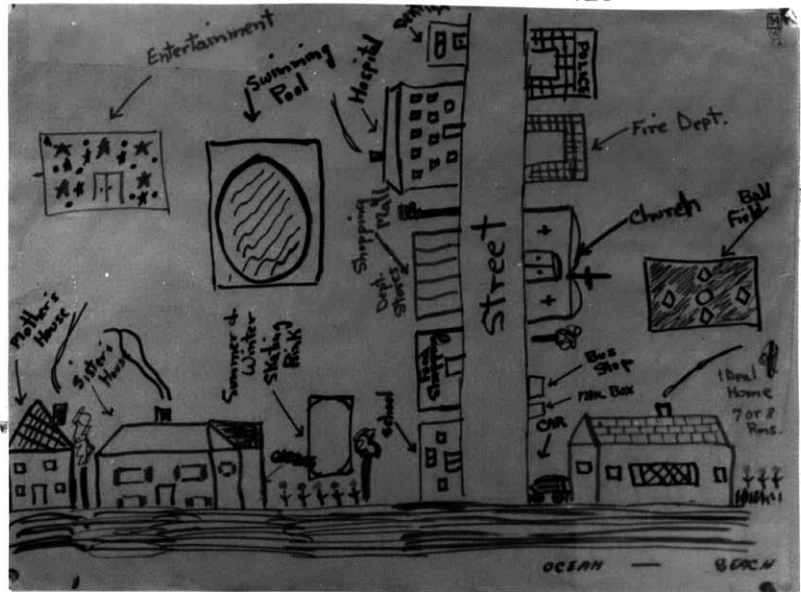
417

REMEDIAL CHANGES
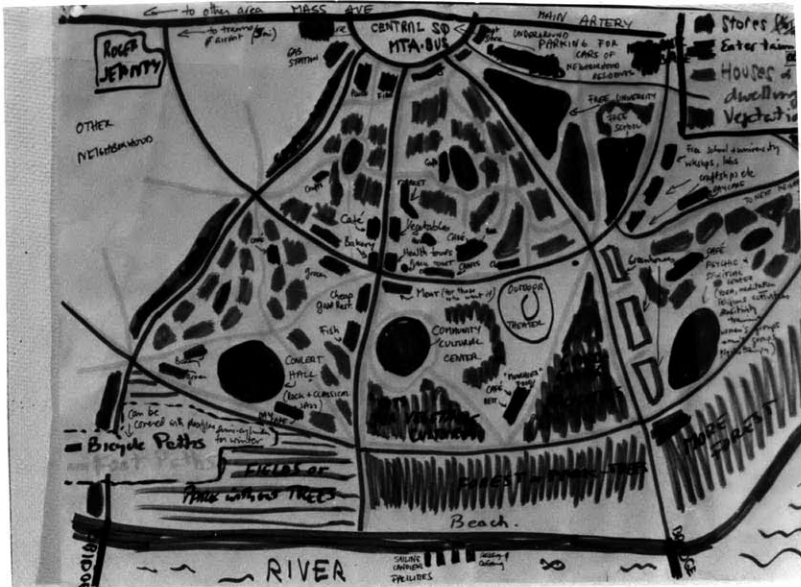
MAJOR CHANGES

MOSTLY DIFFERENT

FIGURE 25A: DEGREE OF CHANGE -- IDEAL NEIGHBORHOODS

COMPLETELY
DIFFERENT

FIGURE 25B: DEGREE OF CHANGE -- IDEAL NEIGHBORHOODS

Overall, 26.7 percent of the ideal neighborhoods involved remedial changes, 6.7 percent involved major changes, 15.0 percent had a few references, and 51.7 percent were totally different.

The degree of change index was intended to measure individuals' willingness to entertain radical proposals for change and, indirectly, their commitment to what existed. A working hypothesis was that the degree of change rating might vary inversely to the length of residence in the neighborhood.

5. <u>Home-Centeredness.</u> Ideal plans differed and were ranked according to the degree that they seemed centered on the home or home-based activities and, more generally, to the degree the residential character of the neighborhood was emphasized. They seemed to break into three categories:

    a.   <u>Specific identification of "home."</u> The subject's house was the centerpiece of the neighborhood and spelled out as belonging to him either by label or clear implication.

    b.   <u>Housing important.</u> The subject's home is not spelled out but housing in general is an important part of the proposal.

    c.   <u>Housing unimportant.</u> Housing is only incidental to the proposal or is not shown at all.

The overall distribution was: 40.0 percent with specific identifications of home, 41.7 percent with housing important, and 18.3 percent with housing unimportant.

Identification with home was hypothesized to be greatest among individuals at stages in the life cycle where they are raising children, and among elderly who are confined to their residence.[22]

"HOME" IS
CENTERPIECE

"HOUSING" IMPORTANT

HOUSING UNIMPORTANT

FIGURE 26:   HOME-CENTEREDNESS OF IDEAL IMAGES

6. <u>Landscape- and Open Space-Centered</u>. Many studies[23] and much intuitive evidence suggest that value-orientation towards open space and the natural landscape is an important grounds for difference among the kinds of environments people seek. Ideal neighborhood drawings seemed to fall into five categories along this dimension:

   a. <u>No mention</u>. Proposals do not include any mention of open space or natural landscape.

   b. <u>Specific facilities</u>. A few dedicated open spaces (usually playfields and tot-lots) were included, but there is no overall landscape indication.

   c. <u>Moderate emphasis</u>. Many open spaces were included and some emphasis was given to overall area landscape (usually street trees).

   d. <u>Open space system</u>. Urban development is set in strong overall system of landscape and open space.

   e. <u>Rural setting</u>. Natural landscape is the dominant feature.

Ideal drawings were distributed across each of these categories as follows: no mention, 6.7 percent; specific facilities, 41.7 percent; moderate emphasis, 23.3 percent; open space system, 18.3 percent; rural setting, 10.0 percent.

7. <u>Street Orientation</u>. This ordering is, in some ways, the antithesis of the previous one, for it ranks images according to the degree that the ideal neighborhood seems oriented to urban streets and public spaces. But they are not strictly opposites. Recent studies of environmental disposition by Craik[24] point to the existence of a subgroup that might be called urban-wilderness-seekers; that is, individuals who value both the experience of living in dense urban surroundings and the isolation of the wilderness. While the degree of orientation towards
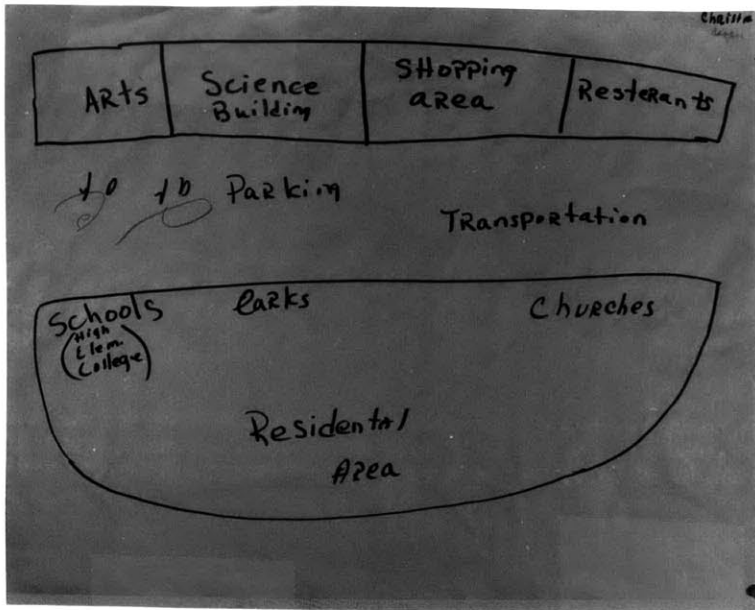
NO MENTION OF
OPEN SPACE
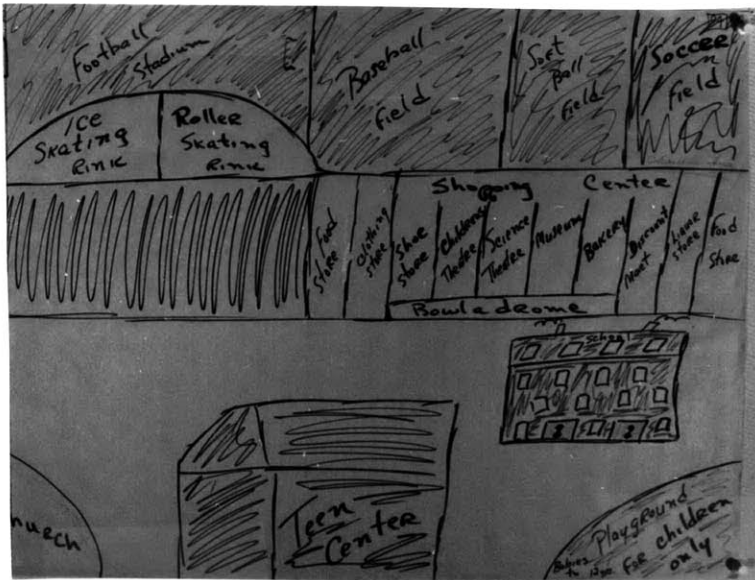
A FEW FACILITIES

MODERATE EMPHASIS

FIGURE 27A: ORIENTATION TO OPEN SPACE AND NATURAL LANDSCAPE

OPEN SPACE SYSTEM

RURAL SETTING

FIGURE 27B: ORIENTATION TO OPEN SPACE AND
NATURAL LANDSCAPE

streets is not the only factor in producing an urban setting, it was
true that most subjects who sought that tended to organize the neigh-
borhood tightly along several thoroughfares. There tended to be several
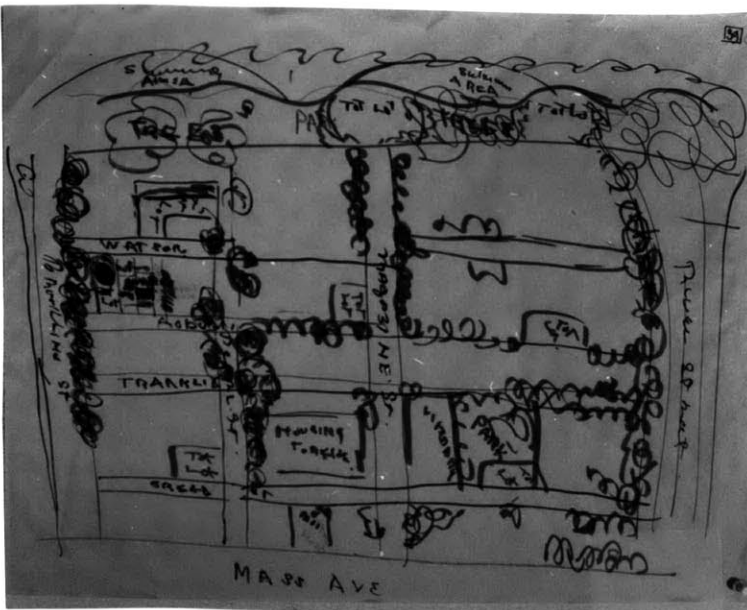break-points which helped to suggest categories:

a. Streets dominant. All proposals refer to streets or
all development is lined up along them.

b. Streets important. They are important reference points
in the neighborhood but some facilities or proposals
are not tied to them.

c. Streets as boundaries. Streets bound the neighborhood,
or divide it into several sub-sarea, but development
is not strongly related to them.

d. No mention. Streets do not appear in proposal.

The overall distribution of drawings was: streets dominate, 38.3 percent;
streets important, 28.3 percent; streets as boundaries, 23.3 percent;
no mention, 10.0 percent.

8. "Mentions" categories. Finally, every item mentioned on ideal
and existing neighborhood plans was catalogued into a series of groups
in order to assess the ways in which proposals differed substantially.
Table 10 summarizes the range, mean and median for a selected set of
categories and the totals for each drawing.

It is perhaps important to note that people's description of their
existing neighborhoods generally included much more detail than their
projections of the ideal place to live (the median number of "mentions"
was 24 and 11, respectively). There were, of course, exceptions; one
person's ideal neighborhood mentioned no less than 65 features. And it
is significant that the one category in which there were more mentions

425

STREETS DOMINATE
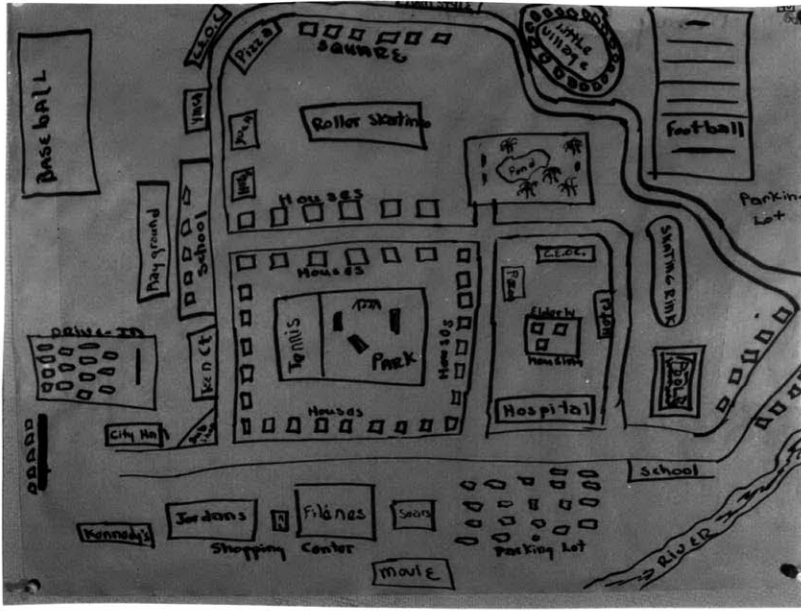
STREETS IMPORTANT
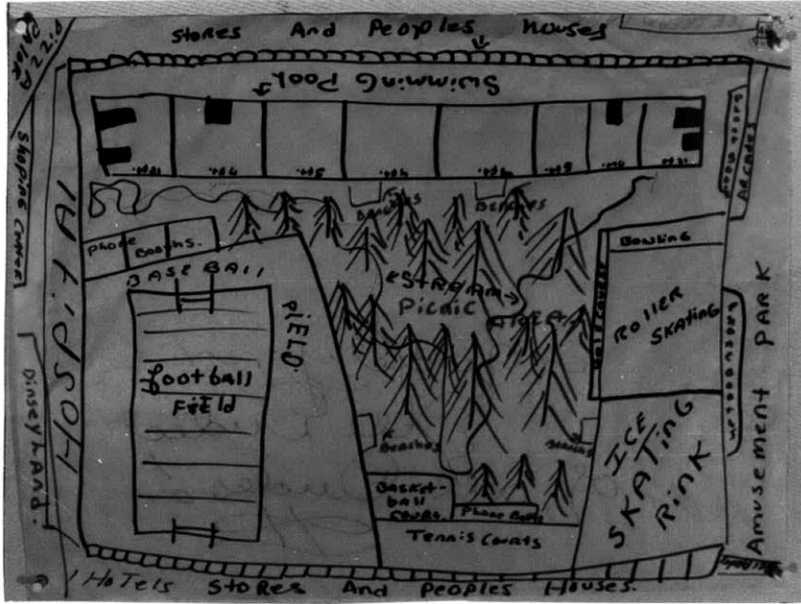
STREETS UNIMPORTANT

FIGURE 28: STREET ORIENTATION OF IDEAL NEIGHBORHOODS

on the ideal as compared to the existing neighborhood was open spaces
and outdoor recreation facilities.

Beyond the eight coding categories, subjects' drawings were also
analyzed informally with an eye to the particular characteristics
which seemed to make them stand out from others. Some of these have
been mentioned previously (see Chapter 5); others are highlighted in
the interpretation which follows.

In fact, every person's conception of his existing environment
and of what he desires is in some ways unique. As Kenneth Boulding
has noted:

> ...the fact that no two human beings can occupy the
> same point at the same time and that the world is never
> precisely the same on successive occasions means that the
> physical world is idiosyncratic for each individual. 25

True, but the differences are not random. The analysis of the Ecologue
maps was intended to reveal how they vary.

III

Four essential sets of questions guided the analysis of the
Ecologue participants' images of their existing and ideal environments.
The first was whether and, if so, how each of the social group's
images differed. "Social groups" were composed of people differentiated
by sex, race, occupational class, length of residence in the neighbor-
hood, home ownership status, personal age, marital status and stage in

TABLE 10 <u>MENTIONS ON DRAWINGS OF NEIGHBORHOODS</u>

CATEGORY	EXISTING NEIGHBORHOOD				IDEAL NEIGHBORHOOD			
	Low	High	Mean	Median	Low	High	Mean	Median
Streets or street-related	1	25	9.4	8.7	0	19	7.1	6.1
Housing-related	1	21	5.8	4.9	0	12	3.7	3.0
Open-space or landscape-related	0	8	1.9	1.6	0	21	6.3	5.1
Institution-related	0	8	2.4	2.1	0	12	2.9	2.0
Shopping or commerce-related	0	19	4.3	3.1	0	19	3.1	1.9
Industry-related	0	3	0.5	0	0	3	0.2	0
Total mentions	7	71	25.8	24.3	1	65	12.0	10.5
n =		45				60		

the life cycle. In order to answer the question, both similiarities and differences are important: similarities, because they revealed what concepts or images individuals shared with others in their group; differences, because they revealed whether the basis for social grouping was of any consequence in shaping those conceptions. The second question asked of the data was the degree of congruence between people's images of what existed and what was desired. Where there were differences, the obvious follow-on to the question was: among which groups was this most evident? Knowing about these similarities and differences, it was important to reopen a third question posed by prior research on cognitive representation: to what extent do stylistic differences, or differences in representational mode, reflect real systematic differences in what is being said, as opposed to random differences in abilities or in the interpretation of the task? Finally, the analysis returned to the original question: what are the best predictors of differences in environmental disposition? Or, stated in operational terms, if the programmer can involve only a cross-section of those who will experience an environment, what is the best way to compose that cross-section?

Social Group Images of Environments

While women's images of their current environment were generally more detailed than men's ($x^2 < .10$),[26] there was less difference in the geographic extent of what they called their neighborhood; on the average, men described an only slightly smaller area than women ($x^2 > .10$). Tendencies were more pronounced among racial groups.

Whites' existing neighborhoods were larger in scale $(x^2 < .05)$ and much more detailed $(x^2 < .05)$ than non-whites. Although the associations are generally weak, they do tend to support the notion that those who are least spatially mobile--blacks and women--have a more locally-oriented conception of neighborhood, in many cases an area only a block or two surrounding their home. Data on life cycle and age differences further reinforce this: the two groups who depart most from overall norms are young adults and elderly. The former portrayed richly-detailed, large-scale neighborhoods; the images of the latter are completely the opposite, usually their home and the single street on which it is located.

Perhaps surprisingly, several social characteristics seem to be little associated with differences in the scale and extent of personal neighborhood. These include: length of time residing in the area, home ownership status, marital status and employment category. One exception is found among professionals: their neighborhoods are much more broad-reaching than found among other groups. But taken together, there are fewer sharp distinctions than one might expect between all of the groups in the extent and detail of their neighborhood description.

The actual places which individuals described to be important also seems more tied to day-to-day experience and location of residence than to membership in a social class. Understandably, many middle-aged mothers emphasized shopping facilities, but so did many young adults and teenagers, both men and women. The differences were more in the kinds of shops mentioned and where they were located than in their relative emphasis when compared to other neighborhood characteristics.

The hypothesis that longer term residents would suggest much more detailed neighborhoods than those who had lived in the area only a short time proved simply not to be true. If anything, residents of 2 to 5 years mentioned both the greatest range and number of neighborhood facilities; those who had lived there longer seemed to narrow what they included in their neighborhood. Coupled with the fact that many 2 to 5 year residents were young adults, this may suggest a period of exploration in the initial years after moving into a neighborhood, followed by a narrowing of what's thought important around everyday routines.

If people's conceptions of their existing neighborhood were less tied to social characteristics than had been expected, systematic variation is more evident in their conceptions of ideal neighborhoods. Despite the enormous diversity of images, several social characteristics seemed closely associated with the images people presented. Table 11 summarizes these correlations.[27]

Of all the variables accounted for, socio-economic class seems the best predictor of variations in the image of ideal environments. Individuals ranked at the upper end of the spectrum customarily produced images of neighborhoods which had more detail and variety ($x^2 < .001$), were larger in scale ($x^2 < .02$) and attached greater importance to extensive landscape systems ($x^2 < .01$) than their counterparts lower on the scale. Table 12 breaks the responses down further, indicating that identification with the home as the centerpiece is much greater among those lower on the scale, while the emphasis on open space and a setting of natural landscape tends to assume more importance at the upper end of the scale. To the extent that there are stereotypes, Figure 29 portrays

TABLE 11 <u>CORRELATION COEFFICIENTS BETWEEN IDEAL NEIGHBORHOOD IMAGES AND SOCIAL CHARACTERISTICS</u>

n = 60

ATTRIBUTE

SOCIAL VARIABLE

ATTRIBUTE	Sex	Race	Stage in Life-Cycle	Age	Length of Residence	Employment Class	Home Ownership
Detail of Ideal Image	-.07 .23	<u>-.28</u> <u>.01</u>	<u>-.26</u> <u>.02</u>	-.32 .01	.05 .35	<u>.37</u> <u>.001</u>.	-.10 .22
Scale of Ideal Image	-.12 .19	-.08 .26	-.13 .16	-.14 .14	.05 .35	<u>.26</u> <u>.02</u>	.03 .41
Home-centeredness of Ideal Image	-.04 .38	.14 .14	.01 .48	.03 .42	-.11 .19	.10 .22	.07 .29
Landscape Orientation	.14 .15	<u>-.37</u> <u>.001</u>	-.15 .13	-.20 .07	-.17 .10	<u>.33</u> <u>.01</u>	.09 .25
Street Orientation	.13 .16	<u>-.38</u> <u>.001</u>	-.06 .34	-.11 .20	-.21 .06	.09 .26	-.08 .26
Degree of Change from Existing Neighborhood	.03 .41	-.04 .38	<u>-.52</u> <u>.001</u>	<u>-.57</u> <u>.001</u>	.06 .31	<u>.45</u> <u>.001</u>	-.17 .10

Key: -.00   -   Spearman Correlation Coefficient
        .000   -   Significance Level

431

TABLE 12 <u>IDEAL ENVIRONMENTS - SOCIAL CLASS/EMPLOYMENT STATUS</u>

ASCENDING CLASS STATUS
(percentages)

CLASS	1	2	3	4	5	6	
Examples	Retired	Office Clerical Manufacturing Operative Service or Commerce	House-wife Middle Income Family	Student in College	Teacher Nurse Sub Professional	Professional Managerial	n
DETAIL							
Smallest Amount	100	73	44	50	–	10	57
Largest Amount	–	27	56	50	100	80	
$x^2 < .10$							
EXTENT							
Smallest Scale	100	53	77	46	67	–	57
Largest Scale	–	47	23	54	33	100	
$x^2 < .10$							
HOME CENTERED-NESS							
Specific focus on home	100	56	33	27	100	–	
Homes or housing important	–	20	56	59	–	80	57
No mention of home	–	24	11	13	–	20	
$x^2 < .05$							
EMPHASIS ON NATURAL LANDSCAPE							
No open spaces or facilities	100	7	–	5	–	–	
Few open spaces	–	46	56	41	–	20	
Many open spaces	–	33	33	9	67	40	56
Strong open space system	–	7		41	–	20	
Rural setting	–	7	11	5	33	20	
$x^2 < .01$							
n =	3	15	9	15	3	5	

SMALL-SCALE, MODEST
FACILITY NEIGHBORHOOD
SOCIAL CLASS 2

LARGE-SCALE, MULTI-FACILITY
NEIGHBORHOOD
SOCIAL CLASS 4

FIGURE 29:   EXAMPLES OF IDEAL NEIGHBORHOODS

two of these. People living on fixed lower incomes (retired) or of
working class customarily imagined ideal environments centered on a
few streets with many local facilities clustered along them. College
students and professionals, at the opposite extreme, frequently drew
their images from non-urban places, imagining a large, less confined
area of open landscape, or even a rural setting, with homes and faci-
lities only loosely organized.

A second important characteristic associated with differences in
images of ideal environments was the individual's stage in the life
cycle. While overall correlations are not as high,[28] Table 13 indi-
cates that differences are significant. One important constrast is
between young unmarried adults (often college students or working
singles) and their (usually slightly older) counterparts with young
children. The latter project images of neighborhoods that are smaller
in scale, less varied, more centered on their specific homes, and
where open spaces are principally dedicated to specific recreation ac-
tivities--playfields, tot-lots, swimming pools and the like. Perhaps
surprisingly, teenagers' wishes for an ideal neighborhood are more
like their parents' than those of young adults.

Again, it is worth noting that several social and personal vari-
ables seem to have little systematic association with differences in
the ideal image. These include sex, length of residence and home
ownership status. Race does enter into the accounting: blacks' ideal
environments were significantly less detailed, had less of an emphasis
on open spaces, and conversely, reflected neighborhoods more urban in
character than those of whites.

TABLE 13 <u>IDEAL ENVIRONMENTS - STAGE IN LIFE CYCLE</u>

(percentages)

	Teenagers	Young Adults	Young Family Heads	Middle Age Parents	Older Middle Age	Elderly	n
DETAIL							
Smallest Amount	55	23	75	33	100	100	57
Largest Amount	45	77	25	67	-	-	
$x^2 < .02$							
EXTENT							
Smallest Scale	67	15	58	56	-	100	57
Largest Scale	33	85	42	44	100	-	
$x^2 < .05$							
HOME CENTERED-NESS							
Specific focus on home	44	8	58	33	50	67	57
Homes or housing important	45	77	25	56	-	-	
No mention of homes	11	15	17	11	50	33	
$x^2 < .10$							
EMPHASIS ON NATURAL LANDSCAPE							
No open space or facilities	6	-	8	-	-	67	57
Few open spaces	55	8	50	56	-	33	
Many open spaces	-	46	17	44	100	-	
Strong open space system	28	39	8	-	-	-	
Rural setting	12	8	17	-	-	-	
$x^2 < .01$							
n =	18	13	12	9	2	3	

What may be concluded from these findings? First, there are fewer distinctions between social groups in their constructs of existing environments than in what they imagine to be an ideal setting. With the restraints of existing reality removed, differences tend to be heightened. Second, the variables most closely associated with differences in environmental preferences and constructs seem to be social class, stage in the life cycle and race. Clearly, each enters into the equation in different ways. Stage in the life-cycle and race, we may speculate, affects desires by shaping everyday experience—limiting the range of social contacts and the settings for these, or expanding them. Social class status may shape expectations by shaping the sense of what is possible. Finally, if the point of involving users in programming centers or acquiring a range of normative views, there is not a 1:1 correspondence between these and people's conceptions of how meaningful particular aspects of their current environments are.

Congruence Between What Exists and What's Desired

Two questions are important in analyzying the congruence between people's conceptions of an ideal environment and the one in which they currently reside: Are some groups more inclined to propose radical changes than others, and, if so, who are they? What is the character of the changes most mentioned? Table 11, previously, provides data on the first of these questions; Table 14 addresses the second.

Several social groups are most closely identified with ideal images that were great departures from the neighborhood as it existed.

Increasing age and the procession through stages in the life cycle

seemed to signal a desire to make only modest changes to what existed

(X^2 < .001 in both cases). On the other hand, individuals of increas-

ing social class were strongly identified with increased changes. The

result is perhaps obvious: young people, especially those without

children and with relatively higher educational and occupational status

most wish the world to be different; middle-aged individuals or elderly

and those in lower occupational brackets aim at only modest changes.

Perhaps less obvious, though, is the fact that home ownership,

length of residence in the neighborhood, sex and race seem to have

almost nothing to do with shaping the desire (or lack of desire) for

radical change. Home ownership is associated with an only slight

(statistically insignificant) resistance to change, somewhat more

homeowners proposed remedial changes to the neighborhood than was the

norm. And men with women, whites with non-whites, newcomers with long-

term residents were virtually matched in their advocacy of ideal envi-

ronments that departed from the existing neighborhood.

When ideal images differed from the existing neighborhood, they

most often involved greatly increased open spaces and facilities

(X^2 < .02) or heightened importance of streets (X^2 < .001) as the

identity-giving elements of the neighborhood. The images in Figure 30

are typical. A smaller number of people combined both, producing

neighborhoods where public ways and open areas provided alternate

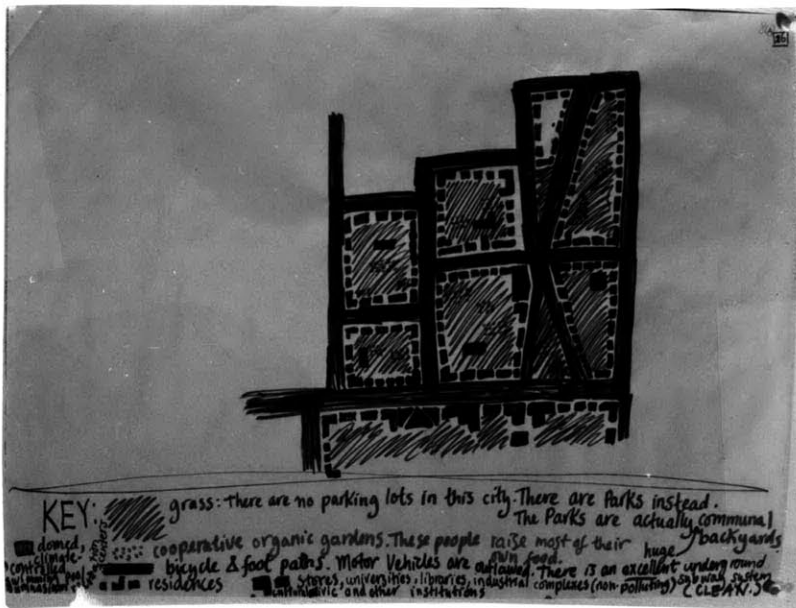points of identification.

438

GREATLY-INCREASED
OPEN SPACES

INCREASED IDENTITY
OF STREETS

BOTH GREATER OPEN
SPACE AND INCREASED
STREET IDENTITY

FIGURE 30:   STEREOTYPICAL IDEAL IMAGES

Finally, it should be noted that there was little correspondence in scale between existing and ideal neighborhoods, although those who produced highly detailed drawings of their existing environment tended also to project highly-detailed ideal environments.

Representation Capabilities and the Images Projected

To have confidence in the inferences drawn above we must address the question of whether people's capabilities to express what they desired visually (or the energy and time devoted to the task or their interpretation of the charge) were the principal determinants of the images they projected or, alternatively, whether they chose different techniques of representation to suit their purposes. That those who presented detailed images of their existing environment also proposed detailed images of their ideal settings may be interpreted at least two ways: either those individuals were more sensitive to environments and had more clearly-formulated images, or they simply were better at drawing, were more turned on by the task and more persistent. We can never be completely sure which interpretation is correct. But the data from this analysis does tend to support the hunch that the style and inclusiveness of the images were purposeful, not simply the accident of capability and circumstance.

Several pieces of evidence, drawn from Table 14 are pertinent. First, there is not a significant correlation between the style of the two images; most people apparently shifted from one to the other, usually in the direction of more pictoral images for their ideal environment.[29] The correspondence between the desire for an ideal environ-

TABLE 14 CORRELATION COEFFICIENTS - EXISTING AND IDEAL IMAGES

	n = 60						n = 44			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) Detail-Ideal		.58 / .001	.17 / .099	.14 / .140	-.06 / .325	.40 / .001	-.06 / .333	.35 / .010	.19 / .109	.09 / .278
(2) Scale-Ideal			-.03 / .397	.04 / .367	.16 / .116	.32 / .006	-.21 / .056	.30 / .025	.18 / .126	.14 / .174
(3) Style-Ideal				.42 / .001	-.18 / .078	.17 / .093	-.09 / .245	.25 / .054	.14 / .189	.20 / .096
(4) Change-Ideal					-.07 / .311	.29 / .014	.39 / .001	.08 / .312	.08 / .313	.32 / .018
(5) Home-C Ideal						-.20 / .067	-.15 / .124	.07 / .336	.03 / .417	-.27 / .040
(6) Landscape-O Ideal							.28 / .014	.42 / .002	.28 / .032	.31 / .020
(7) Street-O Ideal								.08 / .302	.20 / .095	-.19 / .107
(8) Detail-Exist									.57 / .001	.23 / .061
(9) Scale-Exist										-.26 / .038
(10) Style-Exist										

Key:
| .00 | - Spearman Correlation Coefficients
| .001 | - Significance Level

440

ment that departed greatly from the existing neighborhood and the use
of more pictoral/iconic images is significant (X^2 < .001).   Second,
there seems to be no significant relationship between the use of pic-
toral/iconic representations and at least three characteristic quali-
ties of images: their home-centeredness (X^2 < .078), landscape empha-
sis (X^2 < .093), and street emphasis (X^2 < .245). Indeed, images of
these kinds were apparently expressed in a variety of representational
modes. Pictoral ideal drawings were, on the average, only slightly
more detailed (X^2 < .099) and slightly smaller in scale (X^2 < .397).
Finally, my observations when the drawings were made suggested no clear
pattern to the choice of how to draw what people wished to project.
Younger, more educated people tended to prefer slightly more pictoral
modes, but it was not unusual for a middle-aged mother to begin by con-
fessing, "I have this image of a home in the country--I hope I'll be
able to draw it," then to reproduce a camera image in all of its detail.

Predictors of Environmental Attitudes

Supposing that participants were being sought for a programming
project in an inner city neighborhood, what would be the best way to
draw a sample of its residents to insure the broadest range of views
were voiced? The foregoing analysis suggests that, if a range of
views is desired about both the degree of change and its details, the
programmer should seek, first, a representative sample in terms of
social class[30] and stage in the life cycle,[34] thereafter accounting
for racial differences. Home ownership status, sex, and length of
residence are less crucial variables and could be left to random selection.

But a word of caution is also in order. While these represent the best predictors, much of the variation in people's images of what was desired for Cambridgeport remain beyond unaccounting by simple categorization[32]—thankfully, much disagreement exists among people in any group. Thus, a selection process does not lose by redundancy. Differences, some subtle, some great, may be expected even among those thought alike. If a sample of users are sought as surrogates for the wider group to which they belong, it must be large enough to reflect their internal differences.

FOOTNOTES: APPENDIX III

1. For a summary of this work, see Rodger Hart and Gary Moore, The Development of Spatial Cognition: A Review, Place Perception Research Report #7, Clark University, Worcester, Mass., and Rodger Downs and David Stea, Cognitive Mapping: Images of Spatial Environment, Chicago: Aldine, 1973. Hart and Moore make important distinctions between cognitive maps, spatial cognition, environmental maps and cognitive representation. I prefer the term cognitive representation, as encompassing any description (but often, map-like or drawn) of known places, objects or attributes and the relationships between them.

2. See Stea and Downs, op.cit.

3. Ibid.

4. J.M. Blaut and David Stea, "Studies of Geographic Learning," Annuals of the Association of American Geographers, June 1971, pp. 387-393.

5. G. Rand, "Some Copernican Views of the City," Architectural Forum, Vol. 132, No. 9, pp. 77-81.

6. Kevin Lynch, Image of the City, Cambridge: MIT Press, 1961; and Donald Appleyard, "Styles and Methods of Structuring a City," Environment and Behavior, Vol. 2, No. 1, June 1970, pp. 100-117.

7. Tridib Banerjee, Unpublished Ph.D. Dissertation, M.I.T., 1972.

8. Michael Southworth, Unpublished Ph.D. Dissertation, M.I.T., 1971.

9. Los Angeles Department of Development and Planning, Urban Design Study.

10. Stephen Kaplan, "Cognitive Maps in Perception and Thought," in Downs and Stea, op.cit.

11. Florence Ladd, "Black Youths View Their Environment: Neighborhood Maps," Environment and Behavior, 1970, 2, 74-79. The research report emphasizes representational styles, but the study also touched on normative views.

12. Chapin and Brail, "Human Activity Systems in the Metropolitan United States," Environment and Behavior, December 1969, pp. 107-130.

13. The discrepancy between the two totals was caused by difficulties in starting up the program which meant that some participants worked on an accelerated schedule, skipping the neighborhood maps. Additinally, a few groups did individual maps in a slightly different format (as part of an interview and, thus, these have been disregarded for lack of comparable instructions. All 45 existing neighborhood maps included in this analysis were done by participants who also did ideal drawings. A comparison of the characteristics of sugjects reveals that they are reasonably comparable.

14. The coding was done independently by two persons. Results were compared and, where differences existed, these were reconciled through discussion or averaging. In general, there was a high degree of agreement (for example, in ranking ideal drawings on a 10-point scale, over 80 percent were assigned the same rank by both investigators; never more than 1 or 2 were more than 1 rank apart).

15. Drawings were ranked on a scale of 1-10, with an equal number in each rank, based on the number of separate items noted by words or lines on the drawing. This was checked by making a count of items and, in a few instances, ranks were adjusted accordingly.

16. See Michael Southworth, Unpublished Ph.D. dissertation, M.I.T., 1971.

17. Drawings were again ranked into ten equal groups from the smallest to the largest neighborhoods. For existing neighborhood maps, the subjective impression was checked with a count of the actual number of blocks which seemed included within the boundary streets regardless of distortions in drawing the map. For ideal maps, the scale was done by judgement alone.

18. William Michaelson, *Man and His Urban Environment: A Sociological Approach*, Reading, Mass.: Addison-Wesley, 1970, pp. 87-94.

19. See Hart and Moore, *op.cit.*

20. Ladd, *op.cit.*, p. 83.

21. Appleyard, *op.cit.*, p. 116.

22. Michaelson, *op.cit.*, pp. 95-110.

23. For example, S. Donaldson, *The Suburban Myth*, New York: Columbia, 1969; D.R. Weimer (ed.), *City and Country in America*, New York: Appleton-Century-Crofts, 1962; P.J. Schmidt, *Back to Nature: The Arcadian Myth in Urban America*, New York: Oxford, 1969.

24. Kenneth Craik, Chairman, Session Seven, "Environmental Disposition and Preference," EDRA 2 Proceedings, 1970.

25. Kenneth Boulding, The Image, p. 14.

26. For the purposes of the analysis, chi-square test results of .10 or less on cross-tabulations were entertained, while results of .05 or less were considered to be significant. This is a somewhat less exacting standard than applied to most social surveys, but it is believed justified by the exploratory character of this research. Correlation coefficients were computed using the Spearman formula, and similar tests of significance have been applied to the result.

27. It should be emphasized that Spearman correlations are computed on the basis of linear relationships. Data with non-linear relationships, which seems to be the case here, can be expected to yield low correlations. Thus, cross-tabulations were also made for all variables.

28. Based on occupation, or in the case of students or housewives, estimates of the expected occupation or occupation of husbands, respectively.

29. Here the non-linear relationships appear to be an important factor in restraining correlations.

30. The foregoing analysis ranked individuals approximately by occupation and education. A more exact method is to use the Hollingshead two-factor index of socio-economic status (SES) which ranks individuals in five categories by income and education. The difficulty of the index, though, is the lack of area-wide data to help weight a sample--census figures cannot easily be converted into this form. On the other hand, median income figures are both unreliable and misleading. One approach is a two step process--a carefully drawn sample to ascertain characteristics of the entire population, than a selection of participants to match these.

31. Age is a principal component, although account must be taken of marital status and other factors.

32. Although age is the most correlated (negatively) with degree of change from what exists in people's ideal images, only .57 of the variance is explained.

33. The situation is modelled after a recent case which occurred in Washington, D.C. Without the benefit of the Ecologue analysis, the first distinction was made by purpose; within that sub-groups were formed by social class, race, age and sex. Although no formal analysis was done, many of the professionals involved believe that proposals made by groups were less marked by purpose than by class, race and age.

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