Design Guidelines:
Reflections of Experiences Passed

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Summary

The authors discuss the creation and use of environmental design guidelines, based on design research. They make the point that the process of translation from re-search to design is highly erratic and layered upon this inherently erratic process is a largely subjective expression of the guideline author's values. Their article ends with a call for a deeper understanding of this process of translation.

Résumé

Les auteurs discutent la création et l'utilisation de directives concernant un aménagement de l'environnement construit fondé sur la recherche. Ils considèrent que le processus de transfert recherche-design est extrêmement irrégulier et qu'une expression largement subjective des valeurs adoptées par l'auteur des directives vient se surimposer sur ce processus. L'article se termine en demandant que l'on cherche à mieux saisir ce processus de transfert.

1. If Environmental Design Research is to be used by designers, it must be transformed in some way

It is often said in our field that designers don't read research journals; that if environmental design research ("EDR") is to be useful, it must be translated in some way into the language of the design process. (Sommer, 1966/67; Reizenstein, 1975; Zeisel, 1984; Kantrowitz, 1985; Moore, Tuttle & Howell, 1985.) Without some form of transformation for application, environmental design research holds little potential to affect design directly. Even with this translation, the possibility of having effect in the world is limited, especially in the U.S.A. where legally imposed design regulations are minimal.

2. Guidelines emerge to inform design

There are a number of books (increasing over the past generation) published in North America by authors associated with environmental design research, each delineating a particular building type or space with guidelines for designers. These range from guidelines on community multi-service centers published in 1968 (Alexander, et. al., 1968) to guidelines on birth environments published in 1992 (Lerman, 1992). In terms of building types, sets of design guidelines have been published on housing for elderly people (Zeisel *et al.*, 1977; Zeisel *et al.*, 1983; Howell, 1980; Welch, Park & Zeisel, 1984; Carstens, 1985); child-care centers (Osmon, 1971); children's hospitals (Lindheim, Glaser & Coffin, 1972; Olds & Daniel, 1987); cardiac care units (Clipson & Wehrer, 1974); medium- and high-density housing (Alexander, et. al., 1969; Newman, 1976; City of Vancouver, 1978; Cooper Marcus & Sarkissian, 1986); environments for people with Alzheimer's disease (Cohen & Weisman, 1991); battered women's shelters (Refuerzo & Verderber, n.d.); children's museums (Cohen & McMurty, 1985); urban open spaces (Cooper Marcus & Francis, 1990); environments for people with disabilities (Lifchez & Winslow, 1979; Nordhaus, Kantrowitz, & Siembieda, 1984; Moore, Iacofano & Goltsman, 1992); mental hospitals (ARC, 1975); and community group homes or "halfway houses" (Architecture Research Construction, Inc, 1985). Shared among these books is the attempt to make environmental design research accessible and useful to the design process.

Guidelines have been proposed as the best available way of transmitting design research information to designers (Reizenstein, 1975). One study which surveyed practicing designers found that design guidelines were their preferred way of using research to inform design (Schmidt, 1985). While there are many historic precedents for the idea of describing elements of the physical environment in operational terms, we will be referring largely to this work of the past generation, roughly 1970 to the present, initiated by writers who identify themselves as environmental design researchers.

Both of us — Clare Cooper Marcus and David Chapin — have authored (with other co-authors) guideline books (ARC, 1975; Architecture Research Construction Inc., 1985; Cooper Marcus & Sarkissian, 1986; Cooper Marcus & Francis, 1990). We want to reflect on our experience with producing and using guidelines. Of the various possible ways that EDR might inform the design process, guidelines seem the richest and most detailed, least coercive, most dependent on logic and inspiration, and most tailored to the design process. Therefore, we think that a discussion of guidelines may be especially suggestive for larger issues of the direction of environmental design research. We will each describe our experiences of doing research and writing guidelines. We will then propose several areas of research on the guideline approach, along with comments we have made, each on the other's writing.

3. Experience with design guidelines (Clare Cooper Marcus)

My work in the area of environment and behaviour research began in the late 1960s with case studies of medium-density housing, in a form we now term "post-occupancy evaluation." I was concerned with how the residents of low- and moderate-income projects — who had little residential choice — reacted to the design and layout of communities where they lived. I was also interested in how resident's needs and preferences coincided with the goals and values of those making decisions about these

environments (architects, landscape architects, town planners). In a case study of a low-income housing project, Easter Hill Village, I found that some explicit design goals coincided with real resident needs, and these goals were translated into designed forms which made sense to residents. For example, the desire for using private open space for drying clothes, children's play, storage, etc., was fulfilled through the provision of small fenced yards. Some goals correctly identified by the designers, however, were expressed in physical terms which were largely meaningless to residents. For example, designers correctly assumed that residents would wish to sense some individuality in their dwellings. They used some means which residents saw and appreciated (for example, facade colour and building height), but many others which few residents noticed (for example, variations in porch, window and roof designs).

When the case-study of this housing project was published as a book (Cooper, 1976), I added a concluding chapter of "design guidelines." I hoped that these summary-statements of my findings would be useful to designers who wanted research-guidance in their work. While I received some good feedback about this way of presenting research, I knew that there were still a number of communication problems: one, the guidelines appeared at the end of a case-study book which I suspected most designers would not pick up; two, the guidelines were not illustrated and I knew that architects and other visually-oriented professionals are attracted to images more that words; and three, more and more post-occupancy case studies were appearing, the results of which amplified and expanded our knowledge of resident-needs in medium-density housing. We were conscious of the potential usefulness of this research and of the fact that few designers did, in fact, make use of it. Time and budget constraints in professional offices often precluded delving into research; the location of much relevant research (government monographs, academic journals, and so on) was "foreign" to most designers; the language in which this research was (and still is) reported made it inaccessible and uninteresting to those who work at the drawing board.

3.1. Housing as if People Mattered

On and off during the next seven years, a colleague, Wendy Sarkissian, and I collected, assimilated and summarized over one hundred post-occupancy case studies of medium-density housing from the English-speaking world. The majority were from Britain (with a long record of this form of research); about a third were form the U.S. and Canada; and smaller numbers from Australia, New Zealand, and Ireland. Neither of us were proficient in other languages (German, Swedish, French, etc.) to draw upon similar European research.

As we continued our work, we found that many similar conclusions came up, again and again. For example, if some kind of shared outdoor space is provided for the residents of a cluster of housing units, they generally don't like it when people they consider as "outsiders" (i.e. non-residents) come in to use it. The book that resulted from this work, *Housing as if People Mattered: Site-Design Guidelines for Medium-Density Family Housing*, was organized and designed specifically to appeal to design professionals. Each design guideline is stated at the top of the page in bold print; it is followed by an illustration (photo, diagram, or drawing), text elaborating the research background, and a list of "Possible Design Responses." The whole book is organized under chapter headings which make sense in terms of the design-process. Before publication, we had shown the manuscript to many practicing designers and received

very useful feedback in terms of language, illustrations, format, etc. and we incorporated these ideas into the finished book. While the collection and summarizing of case studies, assembling illustrations and so on was an exhausting (and largely unfunded) process, reviews of the book were very positive, and we continue to receive many compliments from those who use it (professional designers, housing developers, students, and academics). *Housing as if People Mattered* received a citation from *Progressive Architecture* in their 1992 arrival awards program, but only, I should add, after having been vetoed two years previously by an eminent designer then on the awards jury who considered this material "dangerous". While many designers are only too happy to have this kind of material summarized and presented in a format they can use, there are others who fear, apparently, that EDR will impinge on their creativity.
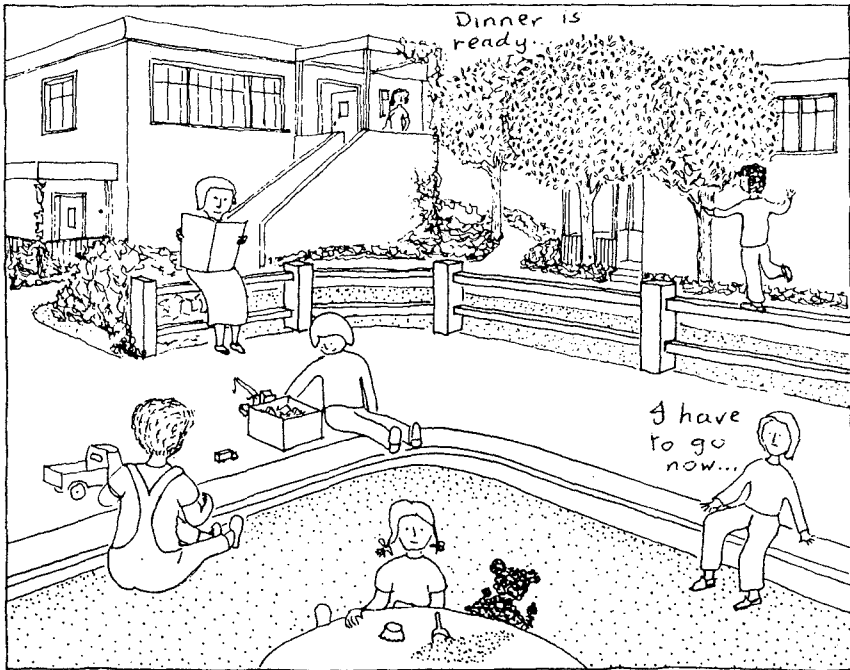

Fig. 1   This sketch imagery dramatizes the importance of locating the tot lot within calling distance of home (Cooper Marcus & Sarkissian, 1986, 142).

Ce croquis montre bien qu'il est important que les emplacements réservés aux jeux des petits enfants soient proches du logis (Cooper Marcus & Sarkissian, 1986, 142).

My co-author and I are aware of the short-comings of this book. First, it was based on evaluations of *existing* housing and therefore could be criticized as guidelines on the design of more-of-the-same (only better). Second, it is based on research only from the English-speaking world and includes an introduction which emphasizes our concern that it be used with this in mind. We are not sure that these guidelines are equally applicable to all sub-cultures in the U.S.A., or to other nations. Nevertheless, it has been translated into Japanese and will soon be translated into Spanish. We can only trust that users of such guidelines will make appropriate cultural adjustments. At least the guideline-statements may have the effect of alerting others, in whatever culture, to think about the design implications of such near-universal issues as privacy, territoriality, security, personalization of space, and so on. Third, some designers wish we had prioritized the guidelines. Most books of guidelines (our own

included) do not attempt to give "weight" to guidelines, suggesting which is more, which is less important. This is for a number of reasons: one, most research findings don't warrant the "ranking" of guidelines; two, each site and program is different, and it would be inappropriate to state that at all times/in all places "A is more important than B"; and three, since some designers may perceive guidelines as a "threat" to their creativity, it is appropriate to word guidelines as suggestions rather than as "prescriptions." In the case of our book, we worded those which we considered most important more prescriptively. In other words, the more particular and provable the statement, the more specific the wording; the more the statement is one of preference or taste, the broader the interpretation.

The problem with writing a book is that once it is in the public domain, one has little idea about how it is used or perhaps misinterpreted. From what we can tell, it is apparently used in the design studios of many schools of architecture. At least two colleagues overseas (in Israel and Brazil) use the book to generate student discussion of local, culturally-appropriate guidelines. Any "mis-use" of these design guidelines is, we trust, outweighed by their positive or benign use at the drawing board, in design programming, and in education.

3.2. People Places

During the course of my 23 year teaching career at the University of California at Berkeley, I have taught a successful course entitled "Social and Psychological Factors in Open Space Design," which is required of all students in Landscape Architecture. I require each student to carry out a detailed post-occupancy evaluation of a local park, play-area, plaza, or other public outdoor space. Over the years, I have retained copies of the best work (and much of the student work *is* excellent!). These studies, together with English-language published research on outdoor space-use, became the core of a more recent book of design guidelines edited by myself and Ph.D. student Carolyn Francis, *People Places: Design Guidelines for Urban Open Space* (Cooper Marcus & Francis, 1990). We were interested in addressing the needs of landscape architects for ready access to relevant user-needs research. Hence the chapters in this book deal with such subjects as urban plazas, neighbourhood parks, campus outdoor spaces, outdoor spaces for the elderly, child care outdoor spaces, and hospital outdoor spaces. Some sections are based on a considerable body of research (for example, urban plazas); others are based almost exclusively on our own and our students' research, for little else was available (for example, on campus and hospital outdoor spaces). As in the first book discussed above, we took great care to organize each chapter so that it would be useful to those we expected to use it — professional designers and students. Each chapter starts with an introduction to, and definition of, the type of space being discussed. This is followed by a review of existing literature which is quite extensive in some areas, sparse in others. The bulk of each chapter is devoted to the design guidelines, followed by several short case-studies. We included the latter in order to illustrate how *specific* places work (or don't work) for people; one of the pitfalls of guidelines may be that one loses track of particular, existing places in the whittling down into common findings. We try to redress this by describing specific places and how they seemed to function for their users. Several other authors have done exemplary work in including case studies and, also, background histories of particular building types (Lerman, 1992; Zeisel, *et al.,* 1983). The case studies we present are real examples of varying success, rather than as "best case" examples of the most up-

to-date designs. As in the first book, we spent a lot of time selecting pertinent photographs and commissioning line drawings and site plans. Even the photographic illustration on the book jacket took a lot of discussion with the publisher as we argued for an image that was not only eye-catching, but conveyed the message of the book.

Illustrations are critical. In my first book of guidelines, my co-author Wendy Sarkissian was more attuned than I was at the time to subtle issues of sexism and accessibility for those with disabilities. At her suggestion, line drawings were subtly altered before publication to eliminate doors and steps, for example, and to portray adults associating with children as male as well female. In the second book, *People Places*, we tried to use more photographs of real places since designers had told us: "*We* know that drawings can lie."

In both these co-authored books, we, the authors, were quite aware that we had points of view, sets of values. In an introductory chapter, we each presented a brief "Environmental Autobiography" so that readers would understand any biases or cultural leanings represented in our work. We strongly feel that no work of this kind is value-free.

4.   Use of design guidelines (Clare Cooper Marcus)

At this point, it is pertinent to discuss how these and other collections of guidelines have been used.

4.1. Design-programming

As a consultant to architects, I have used guidelines as a means of quickly reviewing existing research on a particular topic or building type. For example, when hired as a consultant on the redesign of an abandoned high-rise project into housing for the elderly, I drew on two excellent books of guidelines: Sandra Howell, *Design for Aging* (1980) and John Zeisel *et al., Low Rise Housing for the Elderly* (1977).

I used these books because, one, I was not familiar with this area of research; two, these authors had very similar values to my own and I trusted their work; and three, a severe time constraint required the design team to produce a proposal within less than two months. The reconstruction of this scheme using a program based on these guidelines has been very successful. A later post-occupancy evaluation study revealed, for example, that shared social spaces located and designed according to criteria suggested by Howell were well-used and appreciated, while those which were poorly located according to her guidelines (i.e. at the top of the building), were almost never used (Cooper Marcus, 1986). Neither book of guidelines, however, dealt with outdoor space, and a later excellent book on the topic, Diane Carsten's *Site Planning for Elderly Housing* (1985), had not yet been published. We used common sense and guess-work in developing the program for the outdoors; in some cases we were correct (for example, creating the image of a garden rather than a park; and the popularity of a swing seat, places to sit near doorways, and raised gardening beds); in other cases, features we provided are evidently not wanted (for example, outdoor tables for playing cards or checkers). With access to reliable design guidelines, we might have done a better job on outdoor space design.

4.2. Education

I have heard from colleagues who teach design in schools of architecture and landscape architecture that some students find guidelines useful. As in a professional office, there are time constraints as to how much time can be spent in the library, searching for relevant research. Students appreciate the ready access to information about user-needs, though they often have difficulty balancing these needs with their (the students') desire to create innovative and eye-catching "design solutions."

Unfortunately, when being taught the elements of design, very rarely are architecture or landscape architecture students encouraged to seek out and use research. They may comb recent design magazines to review the latest issues in form-giving and imagery, but rarely are they given the time, guidance, or encouragement to draw upon relevant environmental design research (or indeed, research in building science, energy efficiency, etc.). When influential academic mentors discourage the use of research, it may take some time, if ever, for a practicing professional to reconsider and to see research as a useful component in decision-making.

4.3. Re-Design and Rehabilitation of Existing Environments

In these days of shrinking budgets and deteriorating environments, a good deal of design work in the U.S. consists of rehabilitating out-dated neighbourhood parks, for example, or modernizing 50 year-old housing schemes, converting empty schools to elderly housing, or church premises into child-care centres. In some cases, design guidelines can be useful as a "check-list", to assess what might need to be done. For example, the guidelines in *Housing as if People Mattered* were recently converted into questions to ask ourselves about the appropriateness of the 1934 site plan of Sunnydale housing project in San Francisco, prior to developing questions to ask the residents involved in the creation of a Master Plan for the rehabilitation of this 750-unit project.

No set of guidelines can ever be exhaustive, nor should it attempt to be; new issues arise, new concerns become important. For example, in the housing rehabilitation job cited above, we certainly had no guideline information to assist us in addressing what was *the* most critical problem in Sunnydale: drug dealing. Interviews with residents and our own observations, however, quickly educated us as to how design might discourage or inhibit this activity. Even the well-renowned collection of guidelines on combatting crime through design, Oscar Newman's (1976) *Defensible Space*, does not cover this issue, since at the time of its publication, drug-dealing was not nearly so critical an issue as robbery, rape, burglary, assault and other "crimes with victims." Hence, no set of guidelines, however well conceived at the time, will necessarily be as relevant one or two decades into the future.

It is important to address the very real concern that guidelines for a particular building type may perpetuate an inappropriate (though improved) form. Guidelines based on post occupancy evaluations of existing large hospitals, let us say, might suggest more of the same (only better), whereas that real need may be for better home-based care, more general practitioners, and fewer hospital buildings. A potential pitfall of the "POE—Guideline—Better Building" sequence is that the process may "blind" those involved to other, completely different solutions. I have no easy answer to this dilemma except to say it is something that needs to be weighed in the balance on every design job, with every use of design guidelines. I do believe that some forms are

"generic" enough (e.g. medium density housing) that guidelines can be of assistance and their use will not result in stereotyped solutions. It is also clear that some building types in the U.S. are so new and unique (for example, homes for battered women) that POE studies of the first few such buildings, together with tentative guidelines are better than (re)-inventing the wheel.

One of the potential benefits of design guidelines, apart from summarizing existing POE research, is to alert designers in one culture to design and social innovations from other cultures. For example, a guideline in our book, *Housing as if People Mattered*, about the Dutch "woonerf" or pedestrian street, has aroused considerable discussion in this country, and has resulted in at least one experimental use of this form in a medium-density development (in Petaluma, California). This may not seem like a hugely important breakthrough, but given the conservatism of the civil engineering profession, and the resistance of U.S. society to social innovations in general, this is an important "first." The power of the written word in triggering change is amply illustrated by the effect of a book where guidelines and case studies of cohousing, introduced the Danish "bofaelleskaber" to an American audience (McCamant & Durrett, 1988). In a mere four years since the publication of this book, more than a hundred groups have coalesced around the creation of cohousing developments and at least four are already built and occupied. Significantly, in the one case I know of regarding adoption of a "woonerf" concept, and in most cases I've heard of regarding cohousing, it is the *clients* of these schemes, not the designers, who have adopted the innovation. EB-researcher Sandra Howell has suggested that aiming design guidelines at designers was missing the mark; she argued that it is the *clients* who hire designers who are more critical. The client who hired Christopher Alexander to design Eishin College in Japan came across his work browsing through *The Oregon Experiment* (1975) in a bookstore. The use of guidelines or "patterns" to create a whole series of buildings on the University of Oregon campus in Eugene thus triggered the creation of another set of pattern-inspired academic buildings on the other side of the Pacific. Thus, we should not underestimate the role of private and government *clients* to generate socially innovative environments through the adoption of appropriate guidelines.

5. Background to my design research (David Chapin)

My own search for identity has shaped my point of view. While I grew up in an incredibly stable environment, among competent and successful people, I also grew up gay. This meant that while I had every apparent reason to feel privileged and at the centre of things, I knew myself as an outsider. Feeling outside made me acutely aware of the inside condition and, among other things, developed my sense of empathy. Empathy is a great strength when it comes to doing the sort of research I admire. It certainly sharpens one's observational skills. Also, doing research well depends on asking unconventional questions; on seeing things in a different light. Being an outsider helps reduce reverence for the existing order of things. In trying to deal with these conflicts in my own life I gradually learned to see that the world I was living in wasn't perfect either. I find it easy to imagine a *very* different world.

My undergraduate architectural education at Western Reserve University was based on the Bauhaus approach, highly functional modernism, modified with a great Midwestern sense of how buildings are built. As much as I am glad for this groundwork to architecture it was kept always somewhat abstract; that is, there were

functions involved, but no people involved. This all changed dramatically for me as I got to know my niece Laurie, who had been born brain-damaged. As therapy, she was spending hours upon hours creeping and crawling, with the idea that particular "patterns" were being established in her head, the basic patterns upon which higher order functioning would be built. These hours of creeping and crawling were not enjoyable or easy, but along with her family and supportive friends, she kept at it with dogged determination. To make a long story short, I thought it would be interesting and useful to try to design modifications to the environment in which this took place. I was confronted head on with the question of just how my work as a designer might actually enter deeply into the life of another person. Laurie gave me this experience, which was undoubtedly more important for me than it was for her. My niece changed my life as a designer and headed me for all my professional life towards design with people who have been categorized as "less" or "the other." This obviously resonates with the categories applied to gay people.

Working on architecture Master's at Berkeley, I had the great stimulation of a course with Christopher Alexander who was then forming the Pattern Language and his thinking behind it. This experience established a way for me of envisioning design based on behavioural settings, and introduced me to studies of people in places. I also thought that a compelling feature of pattern language work was how inventive and romantic it all was. Although I am now more concerned about their effect in the world, I still like writing guidelines. It is an opportunity to create romantic imagery and to feel inventive.

In my professional life, all the design, design research and guideline writing that I've done has gradually moved towards "social change" rather than "environmental improvement" (Wolfe, 1985). For those of us who want our work to move this way, it rings false to separate social relationships from physical environments; they are part of the same complex fabric. Design researchers who are content with environmental improvement, on the other hand, seem to be also content with the usual compartmentalization of professional design practice which sees the physical environment as clearly separate from the social and power relations that happen "within" the environment or that helped to produce the environment. Those researchers, consequently, are comfortable with limiting their expertise to the physical aspects of environments, while leaving social change to other areas of expertise.

Another way of seeing the difference between change and improvement is to ask why our world is the way it is. Why are we experiencing, as Harold Proshansky has identified it, an environmental crisis in human dignity? (Proshansky, 1973). We can ask why — anywhere in this world — is there the cruelty of an underclass living in racially segregated neighbourhoods, the silent oppression of piece workers in dehumanized work places, the brutality of underprivileged children in factory-like schools, the lack of civility or common purpose and the threat of bodily harm in urban public spaces (especially for women), or people with illnesses facing the overpowering incomprehensibility of institutionalized medical technology? From one point of view, this would be seen as all a mistake; a "natural" event that nobody wanted but which just happened; an temporary aberration that will be improved upon as design researchers generate new knowledge. For a design researcher who sees the world this way, it is reasonable work towards environmental improvement where "goodness of fit" is the issue, and it is not necessary to challenge existing institutions or be concerned with the "Why is the world the way it is" question. In contrast, there are

those who hold that our world, in the way that it is, expresses patterns of dominance and submission; that particular dominant groups benefit from the status quo; that any act of altering physical environments, regardless of anyone's intentions, either contributes to or challenges the *status quo*.

Maxine Wolfe has summed up this point compellingly in her paper on Lesbian Bars:

> "...Regardless of the people, environments or environmental issues we are concerned about, we have to seek to understand the nature of systems and values (including our own) that create certain types of environments and not others, for certain people and not others, and how and why this happens. Then, and only then, can we understand why people living under certain circumstances view the world and act in the world the way they do and how and why they create environments for themselves in order to survive and make life meaningful...Our choice is whether we will be part of these changes and learn from them or whether we will not and, even by errors of omission, be an added barrier against them." (Wolfe, 1992, 154-155.)

Design guidelines stand at a peculiar intersection of these choices. It is clear to any of us who have done design research that we can improve virtually every human environment. We are all aware, sometimes incessantly and painfully aware, that we can make better places. While guidelines are intended as a neutral tool to do just this, we have learned to question the neutrality of tools. How do we know, even with the best of intentions, that we are not simply contributing to the status quo? If our work improves existing institutions and helps them survive, are we not helping to perpetuate the very conditions of dominance and oppression we find so appalling?

6.   Producing guidelines (David Chapin)

In 1972, we organized the "ARC Group," the acronym standing for "Architecture-Research-Construction," still being run in Cleveland by Michael Bakos. The name reflected our belief that we ought to observe, research, design, build, and evaluate, all as an interwoven process. Funded by a large grant from the Office of Program Evaluation and Research of the Ohio Department of Mental Health, we — 22 people, predominantly designers — literally moved into a vacant ward of an old state mental hospital and set up shop for several years. Over time, we worked directly with residents (about as "other" as anyone gets), staff and administrators to design and build physical elements which were intended to reduce the damage done by the buildings (Molner, 1973).

Part of our approach was to look for conflicts between apparently opposing forces, as suggested in Christopher Alexander's early pattern language work. Here is an example which we found on the wards where we worked. Security conflicts with stimulation. That is, things that are stimulating, such as tools, loose parts, and ordinary objects from around the house, are either valuable or can be used as weapons. In an institution, things that are valuable are usually ripped off; things that *can* be used as weapons are treated as if they *are* weapons, since the institutional mind-set must assume the worst (which for various reasons becomes a self-fulfilling prophecy). Therefore, no stimulating things can be left out and about. The result — locking everything away in the name of security — is bland institutional space. A usual approach to this conflict on the part of designers is to assume that the issue is an issue of values. Based on a belief that stimulation is more important than security, a good-

hearted guideline writer might suggest open shelving with lots of stimulating objects out and available. But, by defining the issue as a "value" issue and then interposing a value for stimulation, reality is denied. Repeated examples show that this doesn't work; that, in fact, the open shelving becomes quickly empty and barren. The ARC guideline recognized both security and stimulation by describing a display cabinet, glazed on two sides, with a light inside and a snap lock. Thus, stimulating things were visible and suggested action on the part of residents, but they could also be made secure.
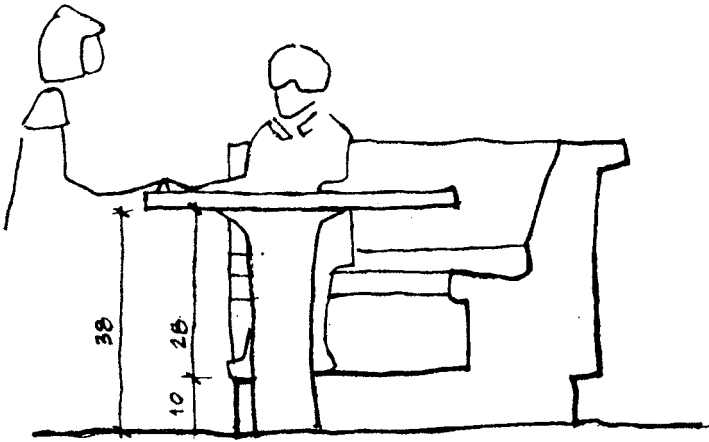

Fig. 2   Diagramming the basic relationship shows how this raised seating puts those seated close to the eye level of those standing, making conversation more comfortable (ARC, 1975).

Ce diagramme illustre une relation de base et montre que des sièges surélevés permettent aux personnes assises de regarder dans les yeux celles qui sont debout, rendant la conversation plus aisée (ARC, 1975).

    We spent two years of intensive work, building and evaluating settings, doing literature research, and so forth. From this work, I want to comment on the position that is often taken about EDR literature: that the reason that designers don't read it is because it is not in their "language" and not accessible. In the mental hospital work, we collected the largest single bibliography ever published by Council of Planning Librarians (ARC, 1973, 1974), and we did a very credible job of analyzing that material. We often did "Soundings" (plumbing the depths) of writings that we thought would be interesting. I think I know the environmental design research literature quite well and by any reasonable measure we found that it contributed very little to our work. It too often considers thoroughly trivial issues divorced from any meaningfully defined context, and presents people as passive rather than active in making and using their environments. There are exceptions, of course. The Ittelson, Proshansky and Rivlin (1970) Bedroom Study stands out because it showed clearly that the conventional practice of forcing people together "so they would interact" simply did not work. It showed that when people had privacy and choice about interacting, they actually interacted *more*. We found it especially useful because it tied together the social rules of space use with the physical design of space. So, I would add or change the reasons usually given for why designers do not use social science research (difficult foreign language, obscure location, etc). These are the conventional reasons, but along with them I think any designer who has tried to use the literature will have found it of low quality.

Fig. 3   The setting as one design which can result from the basic height relationships. A barstool does the
          same thing (ARC, 1975).

          Un type d'aménagement tenant compte des rapports de hauteur. Un tabouret de bar produit les
          mêmes résultats (ARC, 1975).

As a result of these experiences, we wrote a book of design guidelines for mental hospitals in pattern form which covered quite a range of issues (ARC, 1975). We distributed nearly 200 copies of this book to environmental design researchers, as we could find and identify them, around that world. The book was offered free, had to be requested, and was sent out on the condition that those who received it would write responses to it and critiques of it. Actually, we got virtually no useful feedback. This still bothers me, because I think it brings into question the "self-correcting" aspect of a research based approach. This same problem exists for journals in our field where we see very little of one researcher's challenges to another researcher's conclusions.

As we used our book in working as consultants to other architects, we found that interpretations of our guidelines did not fit our intentions. One architect said that he "made everything round, just like you did." While it is true that we had used many round "framing" openings to give people special places to pose, he had taken the image evidently without understanding the content, and had therefore used it inappropriately. We also became aware that designers own archetypal imagery of "mental hospital" came strongly into play, regardless of our guidelines.

The question of organizing guidelines is interesting in relation to this issue of archetypes. How categories are generated and used, after all, become a basic framework for comprehending a particular building or space. In fact, I think one of the great

strengths of a guideline approach (but not much considered) is that it leads readers and writers both towards a comprehensible way of thinking about environments. We organized the mental hospital book (ARC, 1975) based loosely on a hierarchy developed by psychologist Abraham Maslow (Maslow, 1943). Maslow, in brief, says that there is a hierarchy of needs, starting with the most basic, physiological needs. This lowest level of need is "prepotent" and so must be satisfied before being able to advance upwards to the higher level needs such as self-esteem, or, at the pinnacle, self-actualization. We thought that we could make a useful connection between aspects of the designed environment and levels of need. Of course, this work was more easily done in a mental hospital than in most places, since the physical setting is so terribly destructive from the start. The pattern that we put first, therefore, had to do with free access to the outdoors, even if in a controlled area, given that getting out is a most basic physiological need (to blow off steam, to get the blood circulating, to later get a good night's sleep, etc.) and also a need that is consistently denied in mental hospitals. This was done partly on the recognition that designers and researchers often enter such places with their own flags flying; thus, the awful institutional colours are very often the first thing that gets a designer's attention. We believed and thought we saw some evidence that people who were unable to satisfy a lower level need — to blow off steam and get a good night's sleep — were probably not much affected by a change in colours.

I still respect this method of organization. It ties particular physical aspects of settings to particular aspects of people's lives. It can be used to critique existing places. It also says, among other things, that you can at least start with the qualities of settings which are most usually destructive to people. On the other hand, it implies a behaviourist orientation and could be used in a very technocratic, mechanistic way. Our organization contrasts with, for instance, *A Pattern Language* (Alexander, *et. al.,* 1977) which starts with the largest, most global patterns and moves to the more local, and assumes, perhaps, that the designer would want control over issues at all these levels.

This is as good a place as any to say that we actually saw much of what we were doing in writing the mental hospital guidelines as a *subversive* activity (sounds pretty 60s, eh?). But we really did want to try to make such places less oppressive, and we had evidence that our goal was in fact not shared by many of the people who operate such places at many levels. We were told incredible stories which did not jibe with our experience about how "patients" could not have privacy. Why, given the opportunity, privacy in a toilet stall would result in some poor soul sticking her head in the toilet and flushing herself to death. I don't think such "institutional wisdom," as I call it, is limited to mental hospitals. But I do think that our years of direct experience *within* mental hospitals gave us insights into the absurdities of this institutional wisdom as well as an understanding of its own strange logic.

Given this subversive approach, and given the power of existing archetypes, how does one select images in preparing guidelines? For the mental hospital book, we showed people in the most ordinary of circumstances. This reflected our experience in that we found people, regardless of their diagnosis or circumstances, using settings very much as we ourselves did. In fact, we found no reason to design for the particular diagnoses of people. (Drug companies have a vested interest in doing exactly the opposite in the powerful imagery of their advertising. They marginalize hospital residents by portraying them as bizarre. They do *not*, of course, illustrate the "side effects" of their psychotropics.) But it is important to say that our selection of imagery

came from our experience: despite excruciating circumstances, we met and learned from many terrific people who were at the time, inmates. My point here is that we were purposely going far beyond any "research" findings and using our own experience and in selecting imagery.

There is an overarching aspect of how the ARC Group worked that I think is important. We did research partly because it allowed us to practice architecture in a particular way: a way that made it possible to stay in one place, immersed, to work for incremental change over an extended time. Architecture is hardly ever practiced this way. The usual process is to get a job and then be under pressure to get it out, looking for the next job all the while. We wrote about the importance of this immersion and how thoroughly it affected our own understanding of the setting; about how immersion also enriched the design process (Bakos and Chapin, 1987). We certainly felt that we were learning from the people we were working with. Having this luxury of time is a rarity and an experience that every designer really ought to have.

People in the ARC Group began to wonder if what we were doing wasn't as much to do with participation as with design. After all, the mental hospital work had involved a lot of interaction and participation with residents (as well as by staff) of the wards. We evolved a very precise quasi-experimental research design which comes about as close as field work can to an experimental design. We selected two quite similar floors of a geriatrics facility, with similar numbers and diagnoses of residents. After doing a series of baseline measures, we asked half the residents — randomly selected — to participate in making design decisions. (Bakos, Bozic, Chapin & Neuman, 1980) We set up a series of small-group design workshops with these participants and used several different ways of engaging these small groups in the design process. One way was to simply ask participants what problems the building gave them and what they thought ought to be done. We described some of the patterns from our earlier mental hospital work. We also looked at pictures of various settings and talked about their appropriateness in the facility. We designed changes on the two floors and then, with residents' approval, built the changes first on one floor and then, after a delay, on the other. On the basis of behavioural mapping, we could compare various measures such as time awake, time spent within three feet of another person, time spent engaged in activities, and so on. We found by these measures that those people who had participated in design decisions could still be distinguished from those who had not participated, through the course of the work and nearly a full year after the participation occurred. Also, because of the delay in completing the work on one of the floors we were able to show that participation without having an environmental change was no match for participation with change. For me, this work indicates the incredible power of participatory processes and raises questions about how published books of design guidelines are actually used. Do these guidelines help stimulate a process of user participation or do they, by giving the designer the "right answer," make a participatory process *less* likely? It also raised questions for us in the ARC Group about the ethics of our own research.

We began to work in "community" based settings for mental health treatment, including "group homes" and "halfway houses," both alternatives to mental hospitalization in distant, total institutions. The idea of these "community treatment" settings is that they lead to involvement in non-institutional life and are therefore less debilitating than life in total institutions. In 1985, we published *Group Homes: An Environmental Approach* (Architecture Research Construction, Inc., 1985). The book

has many guideline statements, but the major focus is on the *process* of design. We wrote this book with the hope that it would find an audience that would not only include designers and group home administrators, but also residents of group homes. Our test for our writing was that an intelligent former inmate of a mental hospital would be excited by it.

In this book, we strongly advocate participation by residents in the design process and try to give many compelling examples of how this has happened and why it was beneficial. For instance, in one group home, after residents had spent some weeks working on redesigning first their own bedrooms and then other living spaces, the cook reported off-handedly that something odd was happening in that fewer people were showing up for some meals. It was found that people were going out into their neighbourhood, in pairs or small groups, to get occasional meals. This showed a definite shift from earlier attitudes about the neighbourhood — it had been described as "hostile" and "scary." Apparently, in the process of working together, residents had developed new regard for one another, and together ventured out into the community: exactly the purpose of "community treatment." The lesson for us was that it is perhaps a mistake to look only for very linear connections between behaviours and setting design; doing this may only obscure how people experience a setting, how they feel about it and what meaning it has. Also, this brings into question some of the more or less behaviourist, cause and effect assumptions underlying much guideline writing.

A few years ago, at the Program in Environmental Psychology at the City University of New York, we set up a reading group (Herng-Dar Bih, William Burton, and Harouna Ba) which looked into many guideline publications in depth. It was in this group that we began seriously to question the accuracy of information that was being transmitted by guidelines. For instance, in *Child Health Care Facilities*, a book of guidelines and literature review, we found a one paragraph condensed description (Olds & Daniel, 1987, 257) of the "Red Room" described in eight pages of *Institutional Settings in Children's Lives* (Rivlin & Wolfe, 1985, 98-106). Briefly, the point of Rivlin and Wolfe's "Red Room" story was that, in an effort to "challenge the system," children — mental hospital inmates — had been involved in a design project. The result among other things was (contrary to opinions expressed by staff people) that kids worked together successfully and took care of the room they had designed. But *Child Health Care Facilities* presents a very different story. It describes particular design elements as important, but does not mention the participatory design *process*. Further, the single paragraph in Olds and Daniels also suggests that converting offices to "quiet rooms" (used to punish children by secluding them) was a positive "feature." This is quite the opposite of the view of Rivlin and Wolfe, who repeatedly describe the mis-use of physical environments, such as seclusion rooms, to control the lives of children. Science depends on self-correcting mechanisms, but this incorrect information is out there, in circulation. This example of misinterpretation is ironic, because the book is also the best example we have found of an attempt to use information from the social sciences. Fully one-half the book is literature review. The fault is not these particular authors, but the fact that we simply don't have self-correcting mechanisms.

7.   Research that might be done about guidelines

We composed this paper by sending drafts back and forth to each other, and talking on the phone. There were certain issues we could not agree on; hence this last section is presented as a dialogue between us, each identified by our initials.

Based on experience with guidelines, we think that several interesting questions ought to be researched. We have made four categories of questions:

1)   What are the pros and cons of guidelines as translators of EDR?

2)   How do guidelines affect processes of design?

3)   How do guidelines affect the environments produced?

4)   How are design professionals affected by guidelines?

7.1. What are the pros and cons of guidelines as translators of EDR?

DC: Guidelines depend on little bits of social science research gained from one setting being translated through some process to some other setting. We should examine what this means from several viewpoints. First, given that if the logical-positivist position is being questioned as a basis for the (social) sciences in general, how should this decontextualized use of science be seen? Second, how do we know *what* information is being transmitted? (I gave an example of an architect "getting" the idea of round openings, but not getting the reasons why and therefore not understanding where they were appropriate.) Third, what assumptions are being made about the accuracy of the information that is transmitted? There are several examples which I can cite of blatant mis-information in guidelines. Fourth, what assumptions are made about the "self-correcting" nature of science as it is being used this way? In the EDR field generally, journal articles are not challenged, book reviews are laudatory rather than critical, and design guidelines lie even farther out of a process of self-correction. We are not aware of any attempt in any EDR journal to dispute or correct any design guideline that has been published.

CCM: I agree. It is time to re-assess the situation. We need some research on who uses guidelines; how do they use them; what kinds of settings have resulted from adopting guidelines; are they more acceptable, comfortable, etc. for their uses than other, "non-guided" environments? But I also think that you are discounting the importance of the *author* of guidelines in assessing the research available. After all, it is the author's task to separate the wheat from the chaff; to select the most relevant research and put aside what is not relevant; to carefully interpret research; to "guide" us through the research as well as the design. Being the author of a book of guidelines means putting your reputation on the line.

7.2. How do guidelines affect processes of design?

DC: I question whether design guidelines increase or decrease the possibility for participation by users in actively creating their own environments. Perhaps they make users more passive recipients than active agents. After all, the design guideline delineates the geometry of a design solution. What is interesting to me is that I've always wondered how oppressive environments are so effectively designed to be oppressive, and yet there don't seem to be guidelines (or research) on "How to make an oppressive place," or "How to destroy a resident's autonomy in a nursing home." How do *these* horrors get communicated? Maybe you would find it called something else: "Managing the unruly patient through physical design."

CCM: I haven't met any "passive recipients" lately! I work almost exclusively on public housing rehabilitation. The "users" are smart, tough, angry residents — in no way "passive!" They accept or modify guidelines which make sense to them, reject those that don't. And I disagree that guidelines "delineate the geometry of a design solution." Sensitively-written guidelines *remind* the client or designer of certain desirable qualities, adjacencies, etc., but do not dictate a design solution. The designer can interpret the need in a dozen different, appropriate ways.

DC: Guidelines divorce buildings from all the contested issues which surround buildings: politics, history, and, to a large extent, economics.

CCM: Not so! I don't agree. Do you think a design team will take the guidelines and ignore everything else? Surely not. I've worked on a lot of real jobs, and decisions are very much informed and influenced by political and economic issues. Everything is a compromise or trade-off. Guidelines are only a small part of the "brew." I think you assign them more "power" than they actually have.

7.3. How do guidelines affect the environments produced?

DC: One effect of guidelines may be to direct choices among "reasonable" or "affordable" alternatives, which may not, in fact, be what people "need" or "prefer."

CCM: You may disagree with the principle of some older people living in "senior housing" — but research shows about one-third opt for that choice. Should we not use what we know to make such settings more comfortable, homey, secure, etc? Is *that* maintaining the *status quo*? Also, how about guidelines *not* based on POEs of existing settings, such as the excellent State of New Mexico guide to designing places where people with disabilities can go fishing? (Northaus, Kantrowitz, & Siembieda, 1984)

DC: Diversity is sacrificed for generalities. Information from general sources is applied to very specific circumstances. For instance, I have never seen a guideline covering an urban plaza that considers the plight of a gay male couple risking physical attack for holding hands in public. The argument that is usually used is that a designer is always free to adapt guideline information to local circumstances. Again, this is researchable. First, do designers *adapt* guidelines and if so, how, when, on what basis, etc.? Second, are there instances when guidelines have been used where they did not fit local circumstances?

CCM: These are good questions. Of course they *may* be adapted — especially if they are non-prescriptive. We need to think of them as reminders rather than recipes.

DC: But how, if they are used so flexibly, can we say that they are translating information from environmental design research? Beyond this, we have both acknowledged that our purpose in writing guidelines has been to promote our own "messages," our own politics. What happens when research is in conflict with our values? I think this is a dilemma for EDR: it's unfulfilled desire to be something more than common sense; something more than mere prejudices; something also scientific, something also practical. Perhaps we agree that the process of doing guidelines provides a logical structure within which our guess-work is better guess-work than if we did not have that structure. But how do we represent this? As research or as opinion?

CCM: In *Housing as if People Mattered,* we informed readers in an introductory chapter that guidelines with *no* back-up references were our "informed opinions", rather than being research-based. We saw so much housing that broke common-sense rules, we thought it important to remind designers of ordinary, general knowledge facts that often seemed to be overlooked or forgotten. For example, it doesn't need research to "prove" that a vertical edge to a sand box will keep the sand from spilling out, and creating maintenance problems.

7.4. How are design professionals affected by guidelines?

DC: It concerns me that by using design guidelines, designers can get the idea that they know a particular building type without having to actually experience things for themselves. Thus environmental design research contributes to the separation between designers and the places they design.

CCM: I know *many* designers who consider that they *know* a particular building type because they have designed one — once! (No education, no POE, no guidelines) "I've done one day care centre. I know how to do them." I've heard these words from a very socially conscious Berkeley architect. Which is better: 1) Do a building and think you "know" it? or 2) Use guidelines? I'd go for the latter.

DC: Guidelines present the product of a process; too bad that designers take the product but don't go through the process: the process is the most important part.

CCM: I agree — but this is very idealistic. Every consulting job I've been involved with has had an incredibly tight schedule. Participatory design *does* occur — *has* to! — but it is a naive assumption to approach that with the "they-have-the-answer-we-know-nothing" approach. If that were so, why involve us (E&B types) at all. Group psychologists might do a better job.

DC: I think it is tremendously important that designers have huge amounts of first-hand experience. If they did, they might be less likely to contribute to bad building types. My own experience tells me, for instance, that mental hospitals should not exist. It's hard for me to imagine that a person who has had deep experience with the prison system in the U.S.A. would ever want to design one. But designers don't make basic decisions about does or doesn't get built.

CCM: Right — they don't. One limitation of guidelines is that they nearly always are *design* guidelines, and equally important are closely related issues — such as management, maintenance, staffing, or resident selection (in the case of housing) — are ignored. Thus, they narrow the professional focus. In *People Places* we talk about management; so do Welch, Park and Zeisel (1984) in *Independence Through Interdependence.*

DC: Guidelines are one of only a few ways for people in our field to make a reputation, make money, have some effect in the world, gain academic advancement. This sounds sarcastic, but what *are* the ways for someone in our field to become known, to make money, etc?

CCM: Nonsense! Who do you know who has made money? Not me, for sure. If I calculated the number of hours, and years, worked (unfunded) on a book, royalties would probably amount to a salary of ten cents an hour. As to academic advancement, applied research is always seen as "lower status" compared with theoretical research. Yes, an award or citation from *Progressive Architecture* is nice, but whether you

ENTRY LOBBY

ELEVATOR DOOR VISIBILITY
Location of elevators is not obvious from entrance, requiring signs to be posted at the end of the hall, so that people who enter can find their way.

PREVIEWING
Glazed walls between entry pathway and community area allow residents to see what is going on before they decide to go in.

APPARENT TRIP LENGTH
Although the distance from entrance to elevator is long, there are many activities, sources of information and views along the way to make the trip interesting.

MAIL BOX WAITING
Residents can wait for mail and see the mailman approaching from the community room without having to hang out in the lobby.

LOBBY TOILET
Public toilets are convenient to lobby and social spaces, but they are difficult to find because they are located along a residential corridor.

LEGITIMATE WAITING AREA
Residents can sit and wait near the entrance, watching the comings and goings, without being offensive to other residents.

BUILDING WIDE INFORMATION
Bulletin board along entry trip near mailboxes provides a place for announcements that is likely to be seen.

MANAGEMENT OFFICE
Visual connection between office and entrance gives residents a a sense of security but this office will also be more visibly deserted when closed.

OUTSIDE BUILDING USERS
Doorway to neighborhood-wide health center permits access to outsiders without disrupting residents.

FRONT PORCH/PATIO
Uncovered outdoor place to sit next to the front entrance, allows residents to wait outdoors in good weather without being in the street.

WIND AND RAIN PROTECTION
Building overhang at entry doors mitigates the problems older people may have opening the door in windy weather.
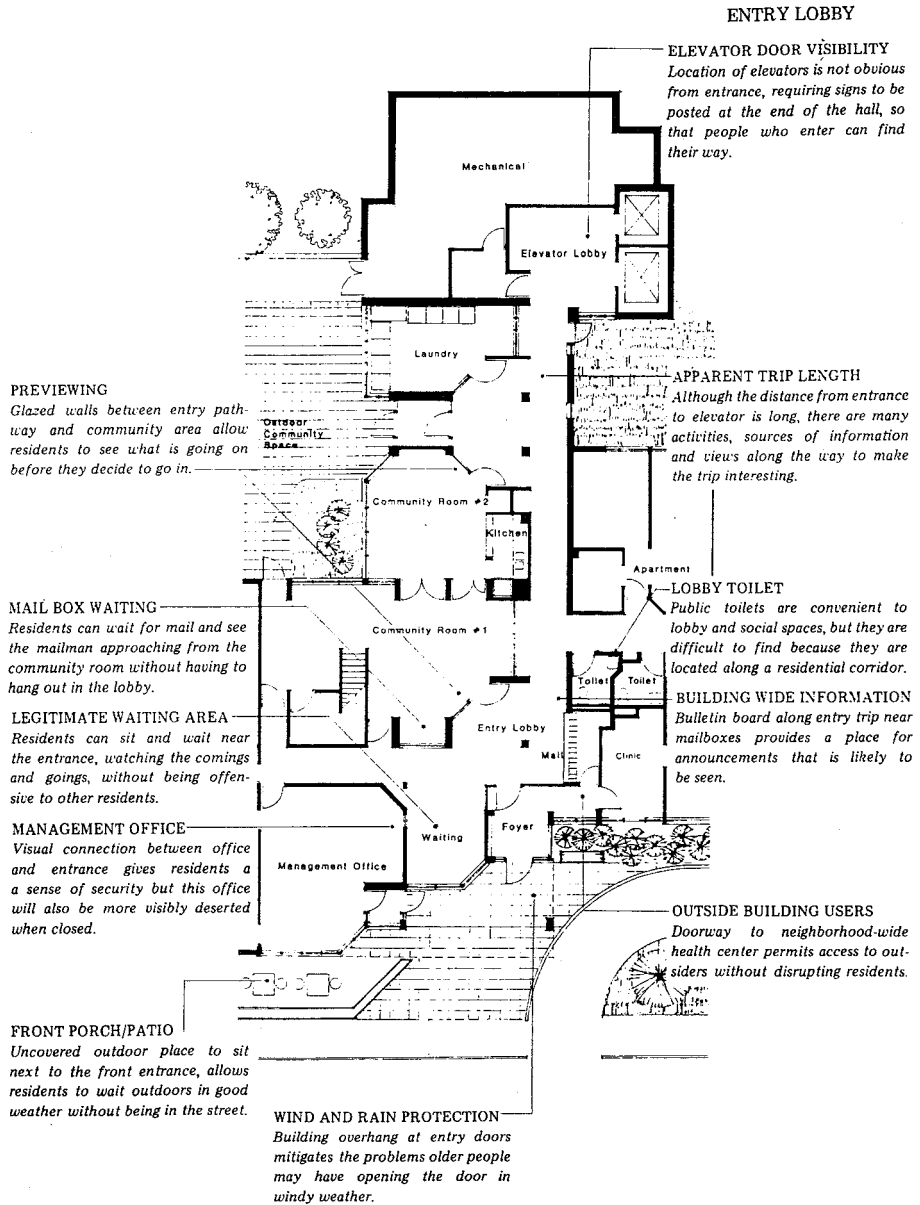
Fig. 4   Clearly annotating a plan makes a direct tie between designed elements and people's use of space (Zeisel, 1983, 63).

Des notes claires ajoutées à un plan montrent le rapport direct entre les éléments de l'aménagement et l'utilisation que font les gens de l'espace (Zeisel, 1983, 63).

receive one or not may be as much to do with who is (or is not) on the awards jury, as it is to do with its intrinsic worth.

DC: It is always said that "reinventing the wheel" is a wasted effort, but is it not necessary for each of us, in some way, to reinterpret and reinvent our world? Maybe the best thing about guidelines is writing them, not using them. Guidelines are presented as a way of passing the results of one person's experience on to another person. But having written them, I think they may have been more important for me and my development than for those reading them. Maybe every designer's education should include writing guidelines.

CCM: Yes, and also reviewing and critiquing guidelines that exist. I do that in most of my classes — getting students to think about the principles, the methods of communication, the extent to which their creativity is "impinged upon", etc. Students are very perceptive critics of how research is presented, especially how *illustrations* do or do not tempt them to read further. My students have always liked Zeisel's annotated plans. They can *see* how design and research connect.

DC: Your reflection on teaching makes me think of guidelines in themselves as teaching instruments. Aren't you trying to teach designers, in a sense, when you write guidelines? But I take "...the extent to which creativity is impinged upon..." to be that old saw again about designers not liking constraints. Actually, descriptions of the design process often show designers seeking constraints. But for some reason they may not seek the constraints we want them to; the sorts that would make more human environments. This also raises the issue of how do you transmit genuine meaning (make them "tight" enough) without being overly restrictive (make them "loose" enough)?

8 . Conclusion: How we agree ...

We both have produced and used guidelines; we both continue to do both. But we both seriously question the effect of guidelines; Clare from the standpoint of their ability to capture and transmit emotional and symbolic values, David from the standpoint of the history of environmental change. What we question in guidelines, we also question in environmental design research, generally.

We think that guidelines are perhaps the most coherent means to make designers, clients and potential users aware of the idea of asking rational questions about environments: they are especially important in raising important issues relevant to a particular building or space type. They can work well to point out what *not* to do; to point out mistakes, often repeatedly made. We agree that they can be used to identify and hone in on conflicting points of view between the participants in a design process. All these aspects of guidelines are based pretty solidly on research.

We also agree that the production of guidelines is something different from "merely transmitting research results." We agree that "merely transmitting research results" is probably a nonsense concept, since research always has, built into it, values. On top of that, guidelines themselves are also an expression of the values of the authors. Guidelines are a way of creating a vision of a better environment; of advocating a particular way of structuring an environment, of weighting things towards a particular end. These aspects of guidelines are value statements which go beyond any concept of a research basis. What we are saying is that the best shot now being taken at *transmitting* EDR information is an extremely subjective process depending a great

deal on the person doing it. Given that this is so, it is essential that authors of guidelines preface their work with an honest statement of who they are, what they stand for, what they believe in. Readers can then adjust their use or acceptance of these guidelines accordingly.

Finally, our point of view is that we really know very little about how guidelines are actually used. Researching the production and use of design guidelines might be especially fruitful work. There are now apparently enough volumes of them in circulation and use that the research could proceed. They have been produced with the best of intentions by some of the best informed people in the field of EDR. They are complex enough to require adept research skills, yet specific and limited enough to expect some sort of research results. While "more research is necessary" is a hackneyed phrase, we believe, in the case of design guidelines, more research might point towards especially clear directions for the entire field of environmental design research.

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