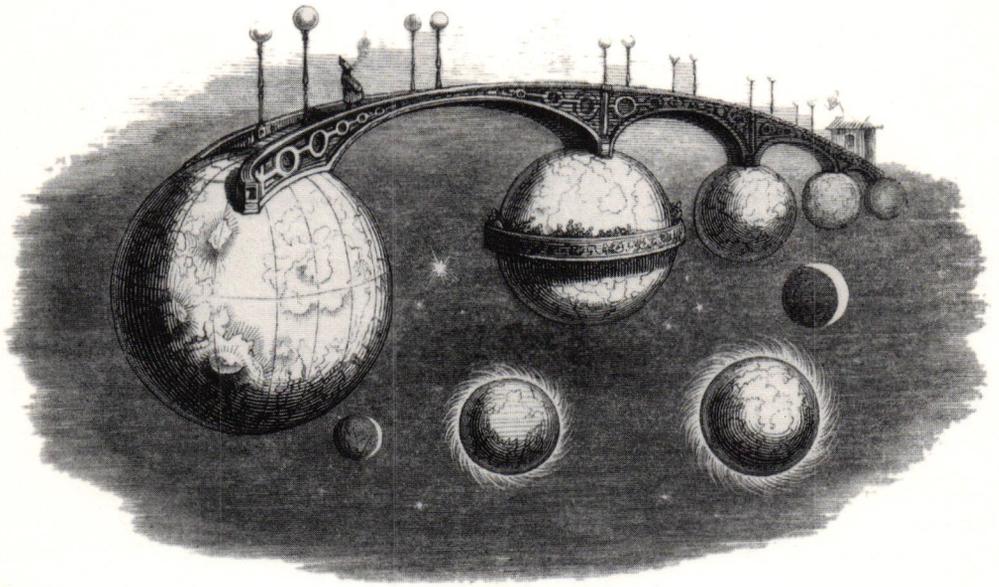
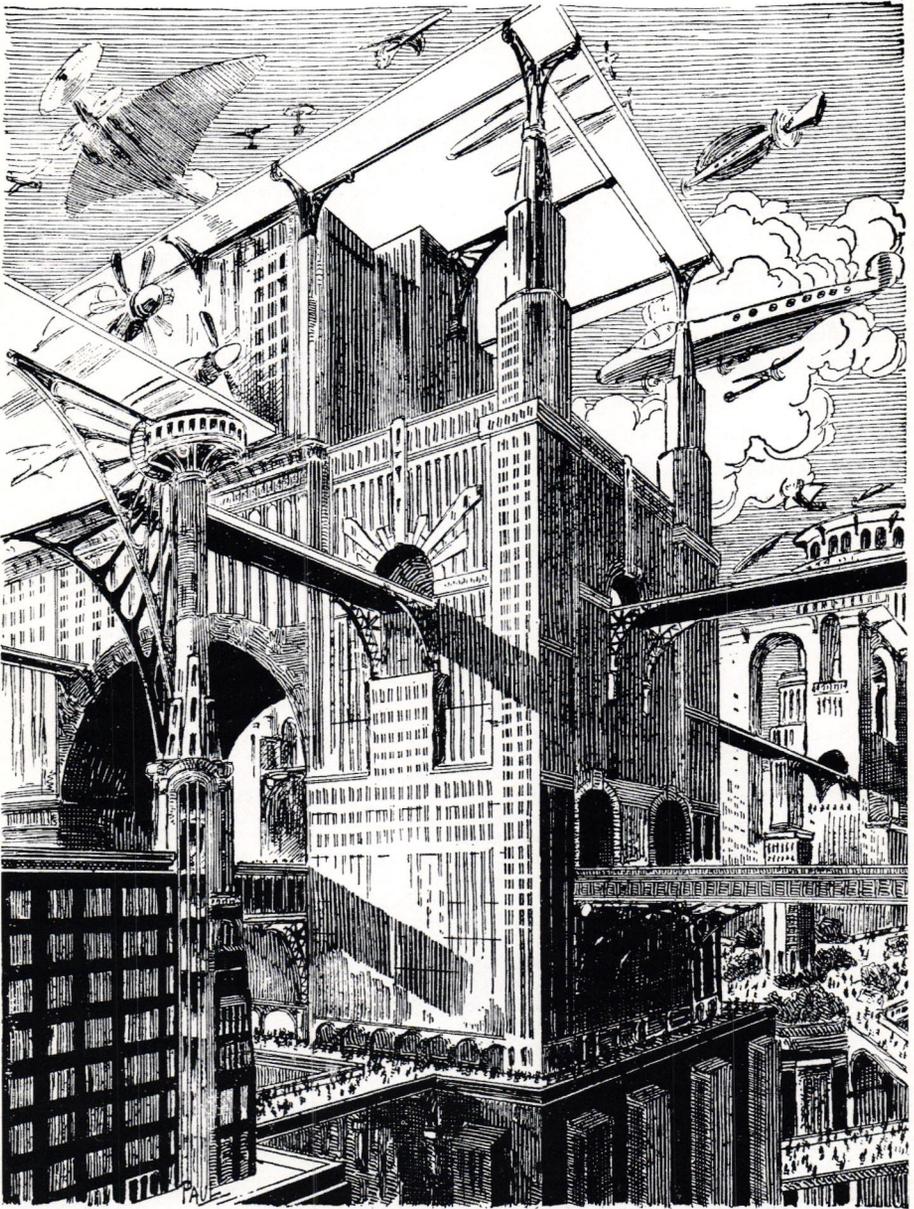


Summer 1996

A R C H I T E C T U R E

CALIFORNIA





Cover, Grandville, Pont enjambant les planetes, illustration for *Un autre monde*, 1844. Cabinet des Estampes, Bibliothèque Nationale, Paris. Frontispiece, Frank R. Paul, illustration of elevated streets and an aerial transit network planned to alleviate the extreme density of cities in the 21st Century, *Amazing Stories Quarterly*, winter 1928. These and other futuristic drawings are reprinted in Christophe Canto and Odile Faliu *The History of the Future: Images of the 21st Century*, translated from the French by Francis Cowper (Paris: Flammarion, 1993).

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California Council
1303 J Street, Suite 200
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From the Editor: History's Eye on the Future

In the first half of the 20th century, the professional associations—The American Institute of Architects (AIA), the Association of Collegiate Schools of Architecture (ACSA), the National Council of Architectural Registration Boards (NCARB), and the National Architectural Accrediting Board (NAAB)—succeeded in organizing, legalizing, and accrediting architecture as a profession in the United States. Having been instrumental in the founding of the first schools of architecture in the United States in the late 1860s, the professional associations weathered the depression and the two world wars. By 1954 they had prepared three extensive reports on the state of architectural practice and education in a half-century of social transformation—*A Study of Architecture Schools* (1932, AIA, Carnegie), *The Young-Goldsmith Report* (1940, ACSA), and *The Architect at Mid-Century* (1954, AIA, Carnegie).

In the postwar period not only did rapid social change continue in the United States, but dramatic changes occurred within the profession itself. Adding to the prewar influx of European architects fleeing fascism, the enrollment in architecture schools of veterans of military service reaping war benefits—veterans diverse in class and ethnic origin—challenged the profession's beaux-arts paradigm and its gentleman character. Studies in the 1950s and 1960s proposed changes in architecture education to train professionals for more “responsible” leadership through broader general education combined with increased opportunities for specialization—*Report by the Special Committee on Education* (“The Three-Man Commission,” AIA), *Re-*

port on the Profession: How Should the Architect Be Trained? (1960, AIA), *Blueprint '65: Architectural Education and Practice* (1965, AIA), *A Study for Environmental Design* (“The Princeton Report,” 1967, AIA).

Growing social unrest in the 1960s, economic transformation in the construction industry, and challenges within the AIA to look at “reality,” led the AIA to undertake yet another exhaustive study of social and economic forces in architectural practice. In the 1970 study on the future of the profession, *Creating the Human Environment* (AIA, Midwest Research Institute), Gerald McCue, representing the



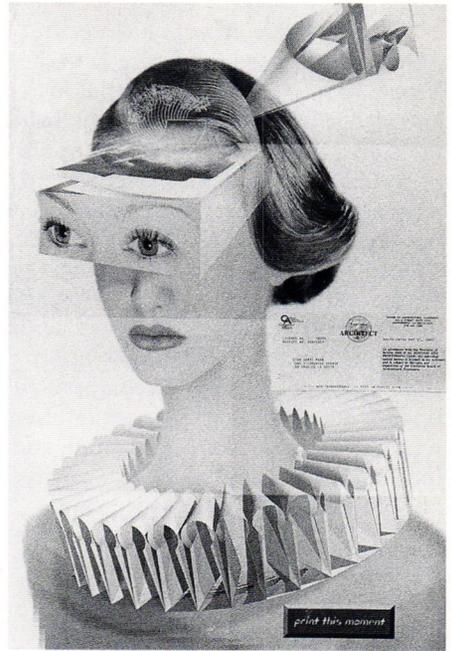
Winged eye enclosed by laurel wreath with the inscription *Quid Tum?* (What next?), reverse side of Matteo de Pasti bronze portrait medallion of Leone Battista Alberti, 1446. Courtesy National Gallery of Art, Washington, Samuel H. Kress Collection.

second-generation deans of the modern movement, wrote, “Historically, the important decisions in architecture were associated with construction itself and later with more finite design description. Recently, however, [they] have related to policy, theory, and strategy.” The report charged that while architects

were busy thinking about design, industry was demanding that design professionals take on a more comprehensive role, “less one of design activity than of managing the design implementation process.” It outlined specific trends in the industry’s restructuring that affected architectural practice. 1) The full range of design production work would soon be done by only the largest firms. 2) The biggest firms and the professional societies would develop public policy. 3) The more theoretical work involving research, programming, masterplanning, and design development would be done primarily outside of the design firms, in universities, nonprofit foundations, corporations, or small consulting firms. 4) The large interdisciplinary firms and the fabricators, manufacturers, and contractors themselves would develop the more concrete aspects of design.

The AIA report brought to the foreground the stark contradiction between, on the one hand, the architect’s identity as either beaux-arts *architect du Roi* or modern “Apollo in the Democracy” and, on the other hand, the actual historically specific material forces of land development, real estate, and the building and design industries shaping contemporary architectural practice.

Questions concerning the social and economic issues in architecture were heightened by the recession of the 1970s. In 1972, the AIA and the Department of Justice signed a consent decree opening the way for competitive bidding among architects for the sale of services. In 1973, Pruitt Igoe was demolished, punctuating the crisis in architecture’s self-knowledge of its historical social role. By 1980, the AIA had set aside its 120-year-old ethical code separating professional architectural service from the investment-based business of building. These events signified a critical shift in architecture’s future relation to society as architecture critics an-



Print this moment, Gilbert Paper poster as “medalion” for architect no. C18096. Visualizing the Future from 1996.

nounced the “failed social agenda” of modernism, and large numbers of architects sought their place of “value” in the rapidly reorganizing building industry.

Consistent with this shift, the *Architecture Education Study* (Mellon Foundation), initiated in 1973, began with a Deans’ Challenge Paper calling on architects “to assist society in its search for a life-enhancing environment.” Further, it asserted that “changes in architectural activities during the next half of this century will... grow from the recognition of societal change. These changes, however, are less in the technology of the built environment and more in the *organization of society itself*.” The great contribution of the study, completed in 1981, was its pursuit of the self-examination of the schools’ own educational practice. Its weakness lay in its inability as a multi-institutional study to effectively draw lessons and influence business practitioners.

As the 1980s drew to a close, the AIA again revisited the future with the *Vision 2000* study (1988). Gathering knowledge from futurists in many fields, the report documented that the supply of architects had doubled since the '73 recession. And, rather than architects proving their value, profitability of architecture businesses was declining: the design and building industries overcame their fragmentation and stretched across the globe, the information revolution exploded, noncredentialed competitors flooded the design services market, jobs were outsourced, firms downsized, and the liability attached to the exclusivity of licensure led to 44 reported claims out of 100 insured. "The growing complexities of a professional 'business' threaten[ed] to compromise or at least partially subsume professional standards." By this time, affirmative action remedies to past discrimination brought record numbers of women and minorities into the schools, with few jobs waiting on graduation outside of the mandated set-asides available to those few who could launch their own firms. The speculative over-building of the 1980s brought unemployment among architects to a record high. While many sought alternative careers as opportunities in the reformed building and design industries unfolded, the 1990s have been increasingly harsh for those invested in a restricted definition of "architect."

The common concern of all the aforementioned studies places changing social processes at the center of architectural practice. The newly released "Boyer Report" (*Building Community: A New Future for Architecture Education and Practice*) extends this body of work in a spirit of optimism. It focuses on the possibility of gaining increased public trust by "honoring a social contract to advance basic human values," by promoting the goal of "a more just society"—the measure by which profes-

sions are judged. Thus, the most essential objective is "an enriched mission" for our profession. "The nobility of architecture has always rested on the idea that it is a *social art*—whose purposes include, yet transcend, the building of buildings." Doesn't this hope for the future resound with irony to values and standards of professional ethics seemingly long past?

Twenty-two years ago when I began studying the architecture profession, I wrote the essay included at the end of this theme section, "The Architecture of Architecture." What do architects think they are doing? What are architects actually doing? These questions have framed my work since. A new generation of architects now faces its future with very little understanding of the speculations of the past. Yes, we are in a new time, perhaps a time of quantum transformation. But, if there is anything to learn from a century of studies of our future, it has to be that narrow practice interests cannot sustain a profession. We cannot, as the Boyer Report urges, revisit and enrich our mission if the base line responsibilities of professionals within a liberal democracy—for example, the recognition of societal discrimination against minorities and women and the positive remedy of affirmative action, a policy that directly impacts our own colleagues—no longer support us.

It is in this light that the humanistic discourse advanced by the Editorial Board and many of the writers in this edition of *Architecture California* remains vital. As the history of the future we have studied has told us time and again, it is only our ethical standards that define architecture as a profession and ensure a "professional" association's sustenance. Our value in the marketplace is only as high as our values.

Lian Hurst Mann, AIA
Editor

Dilemmas of Practice

Robert Gutman

I recently taught a seminar on the future of professional work which was populated by students only one of whom was an architecture major. The other students in the seminar were planning to become physicians, lawyers, accountants, and college professors. While it was striking that all the students appeared to be concerned about the status and working conditions of the professional areas they had chosen, none seemed so apprehensive as the student who was intending to become an architect. Even though he was only a sophomore, he seemed already to have adopted the feeling of crisis that, as we know, is widespread in the profession as a whole.

This experience has led me to reflect again on the sources of the perennial anxiety about the future of the architecture profession. A major reason for it, in my view, is that architecture is perpetually unable to resolve the competing demands that arise from its dual status as an art form and as an enterprise addressed to the practical problems of building.

Architecture's condition as an art makes it a prisoner of debate about consciousness, style, and perception. Its condition as a practical enterprise subjects it to the strains imposed by changes in technology and shifting patterns of social and economic activity. The major awards in the field are given to architects who are regarded as gifted artist architects, but most of the fees paid for services are collected by architects who can respond convincingly to

pressing space requirements of institutional and corporate clients. On the one hand, the AIA is engaged in a continuous campaign to demonstrate that architects "add value," which can be translated to mean an economic advantage for the client who hires an architect. The campaign emphasizes the architect's skill in dealing with everyday operational questions. At the same time, prestige in the profession and the awards granted by fellow architects accrue mainly to those who influence the way we perceive the world. It is the "signature" architects who become the celebrities.

The opposition between the two realms has a draining effect. I find that a good deal of my consulting work with firms focuses on issues generated by the often competing demands of the two facets of architecture. Some of my clients are very talented designers, most of them relatively young architects, who are deciding how to use their skills in a world that defines the role of architecture in terms of solutions to complex problems of facilities and buildings, and in which cost and efficiency are major client worries. At the same time, I work with several firms who have had enormous financial success and are generally respected by their clients, but whose principals feel unappreciated because their projects are rarely published in the architecture magazines, they do not win design awards, and their names are not known in the advanced circles of the schools. Mostly these are firms run by

older architects who wonder, toward the end of their careers, whether they have really made it after all, despite their high incomes.

The problem is chronic in this profession. Few firms can accept the by-now popular categories for classifying practices developed by Weld Coxe and David Maister. Very few practices are willing publicly to define themselves as “business oriented” or “practice oriented,” or as “idea firms” or “service firms” or “delivery firms.” Instead, they try to exhibit the virtues and reap the benefits of more than one type.

The ambiguity inherent in architecture helps to substantiate the claims by other professionals over the architectural domain. Is architecture an art? If so, can't painters and sculptors practice architecture too? We associate the question with the Renaissance, but in fact it is being raised now. Consider the achievement of James Wines, for example, a sculptor by training and not a licensed architect, who heads SITES, Inc. and has designed many attractive, impressive buildings in the U.S. and in Europe, where he is especially popular. Or we can ponder the meaning of recent declarations by the painter Frank Stella, who has turned his attention to architecture and believes he should be given the chance to design buildings.

If architecture is not mainly an art, or is not just an art form, and we choose to emphasize its value as a commodity, is it any wonder that civil engineers, contractors, and developers argue that they should be in charge of design and the building process and, indeed, are at the center of numerous projects?

The status of architecture as an art has acquired more prominence because of the rise of the culture and tourism industries. Promoters, businesses, and advertisers in these industries have fastened on architecture as a means of expanding the range of artifacts, images,

and ideas that can be marketed, sold, and visited. The emergence of university-based schools of architecture has also privileged the art side by developing discourses that highlight issues of aesthetics and representation. I am not suggesting that the promoters of the culture business or the universities have invented the aesthetic dimension of architecture. The point I do wish to emphasize, however, is that the growing importance of cultural activity and the increasing attention to architects as celebrities has helped to accentuate the artistic side of the field.

The interest in building reflects the growth in population and the tremendous expansion of the built environment. An increasing percentage of human activity takes place inside buildings. Space has become a critically more important factor in all sectors of work and economic production. More than ever, low-cost buildings that enhance the effectiveness of work, pleasure, or sports are in demand. A competent architect who is familiar with the latest developments in information technologies, material science, social relations, and the work processes can be a big help to clients. I sometimes meet architects who are reluctant to emphasize their ability to deal with the functional side of building because doing so might diminish their identity as artists and designers. They prefer to focus on the representational and symbolic aspects of these buildings regarding this as a more legitimate manifestation of their talent.

As we all are aware, the division between the representational and the operational aspects of buildings has, over the past two hundred years especially, produced an endless number of theories, ideas, and aesthetic styles that have been intended to connect the two facets. Although one after another of these bridge ideologies fail, and thus lose their authority to convince audi-

ences and professionals, the quest understandably continues. It must. The acceptance of the view that the field is divided would result in architects having to accept a divided self, a much too painful outcome, for this profession or for any other. I am reminded of Scott Fitzgerald's famous take on the issue. "The test of a first-rate intelligence," he wrote, "is the ability to hold two opposed ideas in the mind at the same time, and still retain the ability to function." Perhaps it is the ongoing struggle with this dilemma that is the real "crisis in architecture."

The crisis appears more acute at this moment than in many decades. It has become commonplace to remark on the unusually high degree of fragmentation and indecisiveness in the discipline and in the profession. The length of time that any style or position endures has gotten shorter. Many architects are straining to formulate a new position. The confusion provides an open field for competing professions, and the uncertain conditions of practices are still further aggravated.

Different strategies are being tried to deal with these dilemmas. One approach is to paper over the apparent contradictions and present an image of a unified profession committed to realizing artistic as well as practical values. Recent indications are that the strategy has become more difficult to apply. Its use, however, sustained the 19th century movement on behalf of licensing. The agents of the movement were the American Institute of Architects and similar organizations in Europe. Efforts to hide the views of diverse constituencies within the profession did not work very well in Great Britain, where the registration movement was much less successful than in the U.S. Licensing in Great Britain was opposed by the leading artist architects, such as Richard Norman Shaw and Reginald Bloomfield, who feared that the result

would be an official style. It is probably a sign of the more exposed position of the profession in the U.S., as well as our more entrepreneurial bent, that this concern was never allowed to thwart the registration movement. As a result licensing was institutionalized here earlier than in other western nations.

The program to establish the identity of the profession around the unification of artistic and building acumen was not only the strategy of the AIA. It was also a program adopted by practitioners. The majority of American firms, until quite recently, presented themselves to clients as practices that could provide a full range of architectural service—from program development through design to construction. This model of practice continued to dominate even as the number of services a firm can offer has multiplied. The concept of the extended service practitioner emerged first, followed by the idea of the comprehensive practice.

The very large firms continue to operate in terms of the comprehensive practice model, and are adding to their service complement all the time. But the more conspicuous and interesting trend is the prominence of practices that openly admit that they are service specialists, or as they sometimes are called, "boutiques." Many firms, for example, present themselves as specialists in design. There are also firms that concentrate on production. Other practices claim competence in construction administration. And there are firms that deal with only parts of buildings, such as curtain walls, interior lay outs, or installations for exhibitions. The emergence of this fragmented pattern of practice contributes to the feeling of disarray I mentioned earlier. One of the effects of the specialization is that there is more joint venturing and partnering among firms. Another consequence is that the responsibility for integrating

architectural services now falls into the hands of the client, or his representative, the construction manager. For many architects, these developments are regarded as a disaster because they undermine a principal source of the profession's authority, namely, the position of client's agent.

Architects in the U.S. only acquired the role of client's representative after the Civil War, but then it became a mainstay of the AIA program. To lose this position now is another sign that some of the older strategies of the profession are no longer effective. When architects and critics today question whether the profession can survive, I believe they are often thinking in terms of the hazards occasioned by this loss. It certainly was a bulwark in sustaining a single community of practitioners who together were able to bridge and synthesize the worlds of art and practical building. The issue is especially pressing for the AIA. As a professional association, it functions best when the membership shares one set of values and a common experience of practice. Officers and staff of the AIA can then be sure they are speaking with a single voice. In fact, however, the AIA today, like the associations of other major professions, is a very fragmented organization struggling constantly to respond to diverse constituencies, each with disparate experiences and priorities.

To what extent does the combination of architecture's tradition of an ambiguous identity coupled with the other social and economic changes specific to this moment embody the risk that the profession will disappear? It is surprising how widespread this worry is now. I think the idea is absurd. The demand for architecture will never disappear, it cannot disappear unless one is willing to contemplate the disappearance of civilization. Even then, any effort to reconstruct civilization would

bring architecture back with it. Civilization without architecture is inconceivable. As long as there is architecture there will be people to produce it, and these people will constitute the architecture profession. Of course, the real anxiety is not whether the profession will disappear but rather whether the profession as we have known it will survive. This is a different question, and requires a different answer. Of course, the profession as we have known it will disappear, it has already. The real question architects are asking, I suppose, is what the practice of architecture will be like in the future.

While the professional community is more fragmented, practice is just as vigorous as ever, indeed, more so. Architects receive more attention and are consulted more often now than in earlier periods in the history of building. Freed of their obligation to follow old rules of practice, firms are spreading out in new directions, developing new strategies, responding effectively to the marketplace. It is hard for a general audience of practitioners to believe this optimistic description, because the growth is not consistent. Some older firms are disappearing or have contracted in size. To speak of favorable trends for the profession as a whole never indicates which specific firms will prosper.

Although firms are facing increasing competition from other professions, many architects are invading territory formerly the province of their competitors. Indeed, the manner in which many buildings are constructed now, with facade treatments that are conceived and constructed independently of the guts of the structure, makes it easier to incorporate the art of architecture along with building practicalities. In this sense, Venturi's idea of the "decorated shed" really represents a program that applied to the projects of all practices.

Isn't it odd, in view of the new forms of practice and the new approaches to building that allow for greater unity between the two realms of architecture, that the typical practice course in the schools still accentuates the split identity, and in a prejudicial manner. The split is emphasized through a syllabus which suggests that practice is all about managing, delivering service, getting clients, or dealing with consultants. It usually describes the career of a commercially successful practitioner with no standing or achievement in the architectural culture. The hidden consequence of such a content is that students conclude that projects which seek design value and profitable enterprise are incompatible goals.

I would like to turn this situation around. We should be offering students courses that look at great practices and discuss the trajectory of firms that were important in the history of architecture in America. Many firms have been successful in both producing great designs and making money for their principals. Why aren't we looking at such practices, firms like Richardson or Wright, or McKim, Mead, and White, or more recent exemplars such as the Venturi, Scott-Brown firm? The experience of these firms should constitute the model for practice that students ought to emulate. The courses should be about what it was, or is, about these firms that enabled them to do it right. How did they get their clients? How did they deal with them? How did they organize design work in the office? What were their relations to consultants and to contractors?

My hope is that many courses examining model practices will be available when that sophomore student of mine begins his studies for a professional.

Robert Gutman, Hon. AIA, is Lecturer in Architecture at Princeton University and a consultant to architectural design firms on issues of growth and development. At Princeton, he teaches courses on housing design and the history of the profession. Professor Gutman is author of Architectural Practice: A Critical View. His comments here on current issues in the profession are based on his presentation at the annual meeting of the Association of Collegiate Schools of Architecture in Boston in March, 1996.

Communication Systems, Problem Solving, and the Information Revolution

F. Michael Wester, AIA

The key to understanding the impact of the “information revolution” on architecture lies in understanding the relationship between communication systems and problem solving. By looking at historic precedent the relationship between the two can be understood and possible future scenarios for the profession identified. When examined, the way we communicate can affect the way we solve problems in three major ways. First, the manner in which information is communicated and the extent of its accessibility can determine who is capable of getting involved in the problem solving process. Second, the methods we use to solve problems and the number of possible solutions we can develop for any given problem are determined by the amount of information transmitted, how it is stored, and how it is processed. And finally, and most importantly, the very definitions of the problem can change as the number of potential problem solvers and problem solutions increase. This last item is very important because if the basic definition of problems change, then our basic assumptions about the world and the way it works will change also.

There is much discussion today about the “information revolution,” the coupling of powerful digital computers and the sophisticated telecommunications system linking them together. We are trying to understand exactly what transformations are taking place and how these changes and

advancements will impact our work and our society. On a personal level it is important for us to know what these changes are going to mean to our lives and how we can prepare. As a society it is important to understand these changes so that we can accommodate the change with minimum social dislocations and upheavals.

In the late 1950s and 1960s Marshall McLuhan, Edmund Carpenter, and their colleagues first identified the importance of the “new electronic media” and the changes they saw coming from this new form of communication. They explored how other communication media such as language, writing, and print had specific impacts on culture and the way we view the world around us. The “new media,” it was believed, would evoke “a super-civilized sub-primitive man” who would “begin again to structure the primordial feelings and emotions from which 3000 years of literacy divorced us.”

During the late 1960s and 1970s the study of problem solving theory gained importance in academia because an understanding of how problems are solved was critical to the emerging discipline of computer science. What came from this study was an understanding of different problem solving “systems” and how they process information.

Although both of these fields of study—communications theory and problem solving theory—implied a

connection and link to the other, this relationship and what it might mean was never explored. This is unfortunate because I believe this relationship may be one of the keys in understanding the changes that may come about because of the information revolution. To illustrate this relationship we can look at history and how changes in the communication system changed the problem of architecture in the Renaissance. But first, let me explain in a little more detail what I mean by a "communication system."

My definition of a communication system is the manner in which information is received, stored, and exchanged within a given society or subculture. In order to do these things a communication system must have three basic elements or subsystems. First, it must have an exchange medium through which information can be understood. Second, it must have a storage system, and, third, it must have a channel for exchange. For example, if I speak to you we are using a communication system. The "spoken word" communication system, if you will. Information is transmitted by the spoken word, the medium, through the communication channel, conversation, and stored in the storage device, the brain.

If we look at history we can see that communication systems have evolved up to this point through four major eras each marked by its own contributions to our ability to store, exchange, and generate information. Before the development of speech, the "sub-primitive" man that Marshall McLuhan talked about communicated with his fellow man. This communication system was a sensory system because as an exchange medium it incorporated the overlay of facial expressions, gestures, and verbal sounds. The brain acted as the only storage device and visual or audio contact was the only channel over which communica-

tion could take place. In time speech developed and a new communication system was introduced. This "spoken word" system developed the drawing and the pictograph as additions to the storage subsystem, and the channel of information exchange was expanded to include conversation and the "reading" of drawings and pictographs.

The pictographs eventually developed into writing and established the next system. Reading was added as a channel for information exchange, and the ability of manuscripts and crude libraries to store information led to the establishment of the first academies, the first institutionalized channels for the exchange of information and knowledge.

The fourth system dates to the introduction of the printing press to Europe in 1450. The printed word contributed the book and library as storage subsystems and enabled the school and university to be developed as the major distributor of information and knowledge.

This explains in very broad strokes the evolution of communication systems through western history. It is interesting to note that each system has grown out of the one that came before and does not replace the previous one but rather complements it. Each system over time generates the need for the development of the new system to accommodate the accumulation of information and knowledge it has generated.

During the middle ages the communication system in effect in Western Europe was that of the written word. As a system it had been in existence for some time but had suffered severe setbacks with the disintegration of the Roman Empire. To a large extent the library had been lost as a storage device and the knowledge of writing was limited. As a result, the builders of medieval Europe were operating with

what amounted to a “spoken word” communication system. Access to information storage systems such as manuscripts and libraries was limited mostly to the clergy so that the medieval craftsman/architect had to develop other methods for storing and transmitting the information gained through the practice of his craft. It was for this reason, among others, that the guild and craft system was established, for it gave the craftsman an institutional channel for the exchange of information. The various guild lodges were meeting places where these craftsmen could come together to share insights and discuss developments within their craft. Coupled with the apprentice system it also acted as an information storage system. The local lodge was the depository for the precious manuscripts and templates within a given region, and by requiring one to work as an apprentice before being able to practice the craft, the craftsman could insure that the accumulated information of the guild would be retained and protected.

This arrangement set limits on the world view of the medieval architect. Though a few may have traveled widely, most were totally dependent upon the guild for all information concerning their craft. Any information from outside the guild that might generate new ideas of form or structure had to find its way into the guild in order to reach the architect. This encouraged a heavy reliance on a limited number of archetypes and made it difficult for new concepts to emerge once a solution was found that worked. An illustration of this can be seen in the development of the Gothic arch.

The problem of how to handle intersecting vaults of different spans had long puzzled builders of the middle ages. The problem was never satisfactorily overcome until the introduction of the pointed arch which was brought to Europe during the Crusades. But even

though the medieval craftsman/architect had the basic concept, the gothic arch was used over wall openings before it was employed in vaults. In other words it had to be used in an experimental way before its properties could be understood and utilized in the solution of a complicated structural problem.

The limitations in information storage and handling narrowed the range of possible problem solving methods which the medieval architect could employ. The storage system, the guild, allowed for the storage of only a very limited number of possible solutions to any given problem. Also, the difficulties of transmitting large quantities of information over large areas limited the architects’ store and range of information. This made the testing of probable solutions very difficult because he was limited to what he could compare the solution. If a structural solution deviated from the norm the only way to test it was to build it. Such a limited information base forced the architect to use what is called in problem solving theory a “hill climbing” problem solving method in which he had to start from a single given solution and modify it slightly to solve a problem. This tended to discourage radical experimentation and encourage a more cautious problem solving approach. If the problem could not be solved by modifying the existing solution, then the problem went unsolved.

Because solutions had to be stored as general principles, the medieval architect could not choose a solution here for one sub-problem and a solution there for another sub-problem and then assemble them into a final overall solution. Instead he was forced to look at the building problem in terms that were generalized enough to be handled within the confines of the communication system.

Evidence of the “hill climbing” method can be seen in the characteris-

tics of Gothic architecture. According to problem solving theory, the hill climbing technique tends to produce over a long period of time a very close tailoring of forms to the conditions of use. While many other factors influenced the look and form of Gothic architecture, this feature is one of its recognized characteristics.

By the beginning of the 15th century in Italy the craftsman architect of the Middle Ages was beginning to give way to a different kind of architect. This new architect thought of himself not only as a builder but also as an artist and a scholar. Shortly after this trend started the printing press was introduced in Germany and copperplate engraving followed shortly thereafter. The "printed word" communication system was thus established and the Renaissance was given a new, powerful tool.

The printing press vastly increased the reach of information flow and its content per unit of time. The Renaissance architect was no longer dependent on the guild as his only source of information. The new communication system required only that he be able to read to gain access to the information available. Nor did it require that the whole body of knowledge be coded into exact memories but allowed it to be translated into a symbolic medium and stored for future reference. What this meant was that knowledge about architecture did not have to be gained through empirical means but could be gained second hand through the information system. Thus there was a break between problem solving and the execution of the solution. This allowed the full development in the Renaissance of the artisan/architect. He, unlike his counterpart in the Middle Ages, did not have to be directly involved in the act of building and as a result his definition of the building problem was not the same. The craftsman/architect de-

finied the building problem primarily as the refining of structural issues to express ecclesiastical attitudes about space and light. This was due partly to his close association with the building process, but it also had much to do with the communication system he was operating under. Since the spoken word/written word system made it very difficult to store knowledge, it was natural that the knowledge that could be retained dealt with the fundamental problem of making sure the building did not fall down (even though this did happen quite often). The Renaissance architect, on the other hand, was more removed from the building process and did not have the craftsman/architect's concern for structure. Since structural systems known to work could now be easily stored in illustrated books and referenced as needed, he was less inclined to be oriented toward structural considerations and instead defined the problems of building more in terms of style and scholarly adherence to the historical "correctness" of ancient Roman architecture.

Operating under this new definition of the problem the Renaissance architect utilized the information storage capacity of the new communications system to decompose problems and refine solutions. Matters of style were rendered into architectural orders and reassembled. Solutions were stored in books adding to the supply of archetypes that could be used to develop other solutions. No longer was the architect limited to a hill climbing type of problem solving method. The increased flow of information and access to archetypes enabled him to utilize the more sophisticated "heuristic search" problem solving method because now he had the information necessary to test probable solutions without having to build them. In the "heuristic search" method proposed solutions are measured against known data and tested

against that data. You do not have to go through “B” to get from “A” to “C.” Utilization of this method together with the ability to decompose problems enabled architects to handle increasingly large questions and in the Renaissance one sees the first attempts since the Roman Empire to solve complex urban problems involving several individual building projects.

Today we stand at the threshold of a communication change much more far reaching than the development of the printed word. Television can transmit large amounts of information within short periods of time to many people. It puts this information in a form that can be understood at a great rate of speed because it utilizes a medium, visual images and sound, that is very direct (ie. sensory) and that does not have to be encoded and decoded to the extent that the written word has to be. This is what McLuhan referred to as the “new media” that would lead to the “super-civilized sub-primitive man”—modern man communicating on a very sensory level.

Forty years ago, however, McLuhan’s “new media” television tube was not connected to a desktop computer and, in turn, by satellites to millions of other desk top computers and television tubes. What happens to the “super-civilized sub-primitive man” when this happens?

The digital computer is a powerful information storage and retrieval device. In itself this characteristic would be enough for one to hypothesize that it will lead to an increase in the generation of possible solutions to problems and a wider range of criteria for their testing. But the computer brings to this new communication system a dimension previous ones never had, it is also able to process information at very high rates of speed and thus solve problems. Before, this function could only be performed by the human brain.

The effect of this added dimension when teamed with the distribution potential of the electronic network and the highly sensory nature of video and sound will be to increase even more the number of people able to understand and solve complex problems. This will lead to some basic changes in the definition of what constitutes “The Problem”—be it architecture, city planning, urban design, economics, politics, or whatever—and thus also “The Solution.”

In the Renaissance the problem of architecture changed from an emphasis on fundamental structural considerations to one of academic and artistic “correctness.” To a large extent this “correctness” is still the central issue among architects. But what will it be tomorrow when an accountant sitting in his den uses a comprehensive architectural program to design his new home that will take care of all the technical and programmatic details and produce all the documents and information needed for his contractor to build the house? What happens when this exercise is repeated ten million times around the globe? What is the function of the architect in all this and what will become “The Problem” and what will be the nature of “The Solution?” Although only time will reveal the exact answers we can make some generalized observations based on the historical example discussed above.

In the case of architecture, the problem solving services of the architect may change from solving individual architectural projects to providing the “design framework” within which others would be free to develop their own individual solutions. The solution will not address the problem in terms of a finished product, but in terms of a “framework” for design that others use. The “architect” may be a computer program writer, an en-

gineer, a purveyor of a certain style, or a combination of all three working as a team. Under this scenario one could imagine a design-your-own-home program that would allow the "client" to design his house in the "Frank Lloyd Wright Style" or the "Le Corbusier Style." Thus the "problem of architecture" may no longer be one of technology and academic correctness but instead one of pure style much as it is in fashion design. These "high-style architects" might not limit their talents to just architecture either. They may design whole lifestyles and not just buildings: "Ralph Lauren" architects, if you will.

Unfortunately, this does not bode well for architecture as a profession. There will not be room in the world for too many "Ralph Lauren" architects. The average professional architect may find himself or herself less involved in the design and engineering end of architecture and more involved in the management of the building process. The "problem of architecture" for the professional may then become more one of design management than of design. Or it might mean that there won't be a need for professional architects at all. Just as there might not be a need for accountants, lawyers, school teachers, etc., as more and more information becomes available to us through our computer terminals and television screens.

Our new communication system will also impact the way our built environment looks. As we know from problem solving theory, as the number of possible solutions increases, the "fit" between the problem and the solution becomes "looser." The apparent connection between the two becomes less defined. In architecture the dictum "form follows function," refers to the way the architectural solution physically responds to the functional requirements of the design problem. As

more people churn out more solutions to architectural problems this fit will become less refined. The final architectural solutions will look more arbitrary and the general character of the built environment will become more chaotic. It's hard to imagine our built environment being more chaotic than it already is, but it might well happen.

The impacts on our society in general will be similar to those on architecture. As our new communication system makes it possible for more people to get involved in areas that were formally reserved for those with technical expertise or specialized knowledge we will start to see new ways of looking at old problems. Thus, hopefully, a new Renaissance.

F. Michael Wester, AIA, AICP, is an architect and planner whose firm, Wester Associates, is a virtual office doing large projects with the help of other architects, designers, and thinkers linked together by wires running between their computers.

Emerging Trends in the Architecture of American Cities

Beverly Willis, FAIA

The digital revolution, like the industrial revolution before it, is rapidly changing how America works, and consequently how America lives.

Shrinking Physical Space

Major corporate employers are shrinking the number of their employees. Not all the reasons for the shrinkage are the same, but the root causes are interrelated. Fewer employees are needed to do traditional work tasks. Smaller work forces require less working space. IBM recently eliminated 22 million square feet of office space in the Northeast and consolidated their marketing and services staff into a converted warehouse in Cranford, New Jersey. That is the equivalent of putting eight Empire State buildings in a 400,000 square foot warehouse. Additionally, 800 employees share 200 desks.

Automation and reduced staffing require fewer square feet of space in present office and bank buildings, hospitals, stores, government offices, and other urban services. For example, banks are going on-line. ATM cash machines for withdrawals and deposits are being installed in grocery stores. Branch banks are being replaced with different types of banking services. Robert Hoerl, futurist health care consultant, reports "construction is moving away from monolithic hospital structures to ambulatory care (which accounts for 50 percent of all hospital revenues)."

Consequently, real estate square footage occupancy shrinks proportionately. This means that down-sized companies occupy a drastically reduced amount of floor space. This reduction

in office area requirements has profound implications for the future of many city centers like New York, Los Angeles, and San Francisco.

Effect on Real Estate Values and City Revenues

According to Barry Libert of the accounting firm Arthur Andersen, the 3 trillion dollar U.S. commercial property market will suffer as businesses look to technology for help in producing more goods, using fewer people in less space, and as consumers increasingly use non-store venues to shop. "Over time, real estate values will go down as supply and demand relationships change," Libert points out. "And if there is less demand for real estate there is less pressure on prices (rental income) and ultimately less return that real estate can deliver." The city's income is predominantly dependent on property values, which will shrink in proportion to the diminishing value of commercial and institutional buildings.

Effect on Cultural and Social Programs

As cities cut back on budget expenditures, less money becomes available for city services such as public education, transportation, sanitation, safe water, clean streets, and park, building, road and bridge maintenance, as well as the arts. This portends a substantial and continuing reduction in the quality of life, at a time when expectations are rising with the younger generation. Real estate values must stabilize or new sources of revenues must be developed to maintain American culture and individual potential. For example, without

new computer learning facilities in the public schools, students will be limited in their ability to work in the new data information companies spawned by the digital revolution. The question is to what degree will inadequate education affect employability and, as a consequence, welfare rolls and crime.

An Interlocking Armature

Public funds available for cultural, educational, and social programs are substantially affected by the necessity for budget cuts to counter the negative effects of business changes. Cities have often failed to stimulate the right type of growth (income), as well as to contain expenses due to incomplete or erroneous information. In today's rapidly changing business and technological climate, useful, farsighted data is a necessary part of the urban armature of public and cultural affairs within which all other programs function.

Dispersion

Businesses are asking employees to work at home and on the road. The Architecture Research Institute calls this phenomenon "dispersion." The New York research firm, Link Resources, reports that, due to shrinkage and dispersion, 20 million people now base their work in their homes.

Franklin Becker, director of the International Workplace Studies program at Cornell College of Human Ecology, observes that "corporate culture has historically been modeled after factory work. Employees clock in and managers watch them to make sure they are toiling at their designated positions. In the information age, the workplace could become as different from the factory model as the factory is from the rural farming model that preceded it."

A Mouse Click

Installation of on-line food shopping services, like that of Brobdignagian su-

permarkets in Seattle, has shrunk store space and parking lots by 45 percent, re-instituted delivery service, and made home owners and apartment managers rethink how grocery deliveries can be received without a door person. City governments, like New York, have placed job openings on the Internet to save the job-seeker a laborious expedition to city hall. Internet real estate opportunities for seller and buyer are facilitating property exchanges.

Technology has revolutionized corporate employee practices and work places in offices, medical surgery, banking, and retailing. Access to headquarters, to retail merchandise, government services, libraries, and museums abroad is as easy as a mouse click.

The New Future

Telecommuting provides an opportunity for solutions that have substantial impact on the qualities of urban communities. The digital revolution makes back to the future feasible, where home, schools, stores, and live-work environments can offer better quality of life. Wired connections for computers, teleconferencing cameras, and the Internet need to be built into buildings to help communicate, share information, acquire services, help neighbors, or warn of potential danger. Safer environments, lower densities, more green open spaces are potential beneficiaries of today's shrinkage.

Anticipating such changes can shape positively the future city and its architecture, what it will look like, and how it will be planned.

Beverly Willis, FAIA, is director of the Architecture Research Institute, Inc. (ARI), a non-profit think-tank that studies the impact of future change on cities and their physical infrastructure. ARI can be visited via Internet at <http://www.architect.org>.

The Client's Perspective on the Architectural Profession

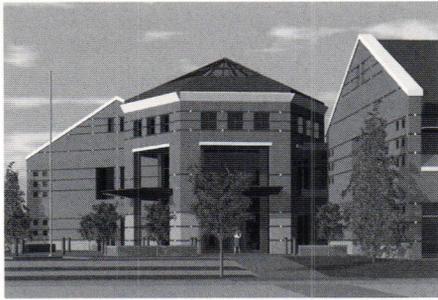
Joel T. Swift, AIA, and Susan L. Swift

"An architect is worth his weight in gold," our developer clients told us on the jobsite of their new home. While this client recognizes the value of an architect, the profession is undergoing an evolution which has perplexed most, bewildered others and, as an Internet user stated, left many talented architects feeling "like technology is passing them up, [as if they are] technology road kill...." In light of evolving business technologies, the client's perspective on the architectural profession deserves careful examination. A discussion of current trends in architectural practice is essential to an understanding of dynamic client needs. Recent developments in the design process have generated many new project delivery methods responding to a myriad of issues. The traditional roles of ownership, design and construction have metamorphosed to the point that successful participants must maintain resiliency. The wide range of roles and delivery methods is indicative of growing demands by clients for a better product using fewer economic resources in a more complex design team environment. As Virgil R. Carter, FAIA, puts it, "information technology and one's ability to master it—in multidisciplinary team settings—is probably the single most influential change in architectural practice." Under these evolving conditions, the successful project requires a strong team effort, with the owner assuming an overriding responsibility for cultivating and maintaining a team of diverse specialists. Carter proposes that those ar-

chitects who master information technology will succeed in this environment, and "leadership will likely be the responsibility of those who can effectively organize, communicate and direct multidisciplinary teams."

The standard of care is likewise in a spiraling expansion. John Webre, AIA, president of Dreyfuss + Blackford Architects in Sacramento, California, provides the example of a \$10 million office project for the County of Placer to be bid in 1996. This project requires almost double the number of drawings as a similar project ten years earlier. The communications infrastructure portion of the project alone amounts to an additional \$2 million of fiber optics and computer network equipment, roughly equal to the mechanical and electrical disciplines. As the construction industry has evolved, the client and architect alike need the protection of more complex contract documents in order to survive the bidding and construction administration phases.

Current technological trends reflect the accelerating information demands of the design process. Timely communication and access to information is critical. New technologies of electronic mail (email) and voice mail (vmail) have changed the nature of all business, and architects must be proficient in these tools. In addition, the future holds the linking of the computer, telephone and video into a hybrid communication tool. Jerry A. Laiserin, AIA, CPA, who represents several corporate and public clients, observed in an on-line CompuServe conference that



County of Placer Finance Administration Building, Auburn, CA. Dreyfuss + Blackford Architects. 3D computer graphics downloaded from architects' BBS.

architects "keep slipping further away from direct communication with [the] owner...that's where the battle is...architect vs. CM, architect vs. development consultant...who gets to talk directly to the owner?"

The culture of many public and private sector clients has evolved to include email and vmail as expeditious manners of communication. At the County of Placer, for instance, most internal correspondence utilizes email or vmail. Given the wide variety of work schedules, meetings and facility locations, this approach has become a business norm for many clients. Consultants who do not have email connections to their clients risk becoming disconnected from both the day to day evolution of a project and the cultures of those clients. Many barriers impede this connectivity, including the resistance of many clients' network managers, who raise valid security considerations. Voice mail has likewise become a requirement of daily communication. "Dialogue is not necessarily face to face," says Dan Eriksson, AIA, of Comstock Johnson Architects in Sacramento. With vmail, project information can be communicated, regardless of whether the related parties ever talk directly to each other. As with any technological advance, vmail has limitations and potential abuses. It has, however, provided many more oppor-

tunities for architects and clients to improve communication. In the future, clients and architects will have to work together to facilitate the involvement of design consultants in the client's electronic culture.

While critics point out that the electronic age often increases paper waste, the use of electronic media is nonetheless becoming mainstream. "We are moving towards a paperless office. I literally never have to go to the file cabinet," says Eriksson of responding to a client's demand for project information. Whereas information research previously required hours, the nimble architect can search keywords in the network from the desktop computer. Clients demand the accelerated response facilitated by email, vmail, fax, cellular telephones and pagers. As one facility manager stated, "There are so many ways to bug your architect. They just can't escape."

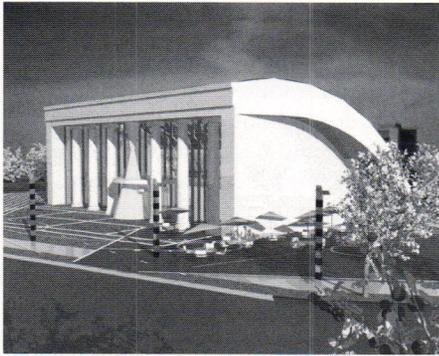
The nature of electronic links between the architect and client is also evolving. Architects have had to be flexible and innovative in finding ways to maintain communication with clients. Comstock Johnson has developed their internal network to allow clients to "log on" as remote users. This window into the architect's office provides the client with the ability to peek into the project process without being physically present. Dreyfuss + Blackford uses an in-house electronic Bulletin Board System (BBS) to control and update drawings. While the BBS was originally set up for the use of the design team, many of their clients are using this tool as well. The client benefits from improved document coordination and a faster paced design process. In addition, the client's ready access to this information facilitates decision-making. For instance, a change to a floor plan can be made, posted and downloaded in minutes. Instead of clients relying on overnight delivery of

plans, the latest information is in their hands as quickly as it can be printed. The County of Placer uses this approach to update user departments and to facilitate the project process. The ability for the design team to attach drawings to an email message represents the next evolutionary step in simplifying electronic data transfer to the client. Laiserin, who consults nationwide, provides the example of a \$100 million project where the client required, in the project manual, that all correspondence would use Lotus Notes, "...no calls...no mail..no Fedex...just log in...and drop it off or pick it up....not just how each of you (architect, CM, etc.) talk to us...how you talk to each other [because the client is] not paying for old media." Laiserin reports that the client was very pleased with this strategy for a fast track job.

Architects need to understand the limitations and opportunities that have evolved on the Internet. With many architectural firms rushing to set up Internet web pages, others, like Webre's, are looking for a "simple, straightforward Internet access to clients." Many firms have jumped on the web page bandwagon, but architects are just beginning to take advantage of the vast possibilities of this media's access to clients. For instance, the State of New York's policies for licensing and stamping of drawings are posted on CompuServe. The Potomac Valley AIA chapter in Washington, D.C. has made available on the Internet their version of a document for selection of an architect. On a regional level, it is worth noting that California, the uncontested leader in computer technology, is not necessarily a leader in use of the Internet by the architectural profession. While a search of the Internet in June of 1996 revealed more web pages for California architectural firms than any other state, California

AIA chapters and the California Council have yet to be responsive to the growing number of clients on Internet. As Laiserin, the 1996 chair of the National Computer-Aided Practice PIA, comments, "The train is leaving the station...are you on it or under it?" One notable exception is the San Mateo County AIA chapter which has posted a web page with chapter roster, meeting schedules and newsletter information. Another new resource is CompuServes Architecture & Building Forum (GO ARCH), a CompuServe gathering for architects and the design profession created by Linda Joy Weinstein, AIA, an Oakland architect whose company called CYBER-ecture is dedicated "to bring together the collective experiences of the online architectural and building enterprise." The average clients searching the Internet, however, would not find information on the California-specific design issues facing them.

More revealing, however, is information that clients and potential clients search for and provide on the Internet. According to Weinstein, "the Client/Consumer Library of the Architecture & Building Forum provides information for consumers not only in how to hire an architect, what to look for in contracts, and how to cost out projects, but also in the area of real estate and programs such as CAD which are geared toward the homeowner. Additionally, there are resources for the professional client such as procurers of architecture and engineering services such as the GSA and numerous other governmental and corporate entities that have facilities departments." Another CompuServe Forum, Time-Warners Dwelling Forum Architect/Design section, includes articles discussions and images on a wide variety of subjects including an "Owner-Builders Design Dream Home in Swamp-land," how to choose the right door

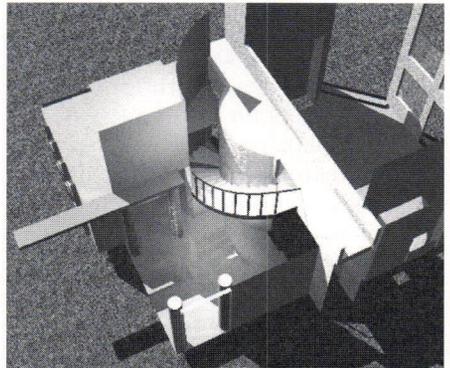


Wnorbw.tif. Sports Pavilion, Washington, DC. Joel T. Swift, AIA, architect. still image from animation. Example of VRML presentation.

for your home, several articles on stone maintenance, timber frame construction and oriented strand board, how to select an architect, three design competitions, several images of architecture in Belgium and South America, examples of contemporary European architecture and questionnaires for selecting a contractor and developing project programs. Even more intriguing are several home plans which users have posted for others to download and critique. This creates a dynamic dialogue (or cyberspace "thread") where anyone, including total strangers worldwide, can review and comment on a design. While it may seem unrealistic to suggest that online design review may occur in the near future, clients are already using this tool on the Internet.

The realm of the Internet has expanded beyond home pages to "home worlds," three-dimensional representations of any subject which users can download and view. Virtual Reality Modeling Language (VRML), the nascent three-dimensional (3D) navigation language of the Internet, provides links to Autocad and 3D Studio drawings. VRML also allows a home world to be linked to others in the same manner that home pages produce a dynamic information environment. VRML and other 3D applications yet

to be developed provide the platform for expanding horizons on the Internet. Whereas many architects assert that 3D is "not quite there yet" as a practical tool, the computer industry is leading clients towards expectations which run contrary to that belief. With the commercial success of computer animated graphics in advertising and entertainment, our culture has come to expect high quality three dimensional representation of subjects. These expectations have already spilled into the design realm where inexpensive 3D graphics are available to the consumer at electronics stores, and hardware stores are selling kitchen cabinets using rudimentary 3D computer aided design. While it is arguable that these basic applications may not provide the visual quality or level of detail required by an architect, the expectations of the average consumer already include 3D computer graphics. John and Crystal Harris, our developer-homeowner clients, attest that computer generated 3D images "made the difference" in demonstrating how the spaces in their new home would appear. For many clients, simple 3D computer graphics are easier to understand than the two-dimensional plans and elevations that architects have been trained to produce.



Harrbw.tif. Harris Residence, Folsom, CA. Joel T. Swift, AIA, architect. Example of 3D Model of entry/stair, used as a tool for client discussion of complex spaces.

With today's affordable, sophisticated desktop computer hardware and software, the saturation of Computer Aided Design and Drafting (CADD) ushers in a new generation of desktop Geographic Information Systems (GIS) and Facilities Management (FM). To many corporate and public clients, CADD has matured into a requisite technology for design teams. In Laiserin's words, "you don't get extra points for having it." Sophisticated clients want design teams who understand such strategic technologies as GIS and FM. GIS and FM use relational databases to link graphic information and virtually any other electronic data. GIS enables land use information, consumer data, and environmentally sensitive issues to be graphically related to the siting of a project. Similarly, FM allows internal data ranging from equipment maintenance schedules to space efficiencies to be connected to a CADD drawing. GIS and FM allow any project data from budgetary to scheduling to process documentation to be attached to smart drawings or, as John T. Miller, AIA, a Milwaukee architect, states in an on-line discussion, "through technology we no longer have a static set of plans...but a dynamic database that can serve the client through the life of the facility." Savvy clients use these smart drawings to develop databases linking architectural plans to all aspects of their facilities, providing a tool for preventative maintenance programs, future redesigns and expansion projects. Ultimately, smart drawings foster the client's ability to collect and analyze data throughout the life of a facility.

Technology has allowed sophisticated clients a greater degree of involvement in the design process. Jay Bietz, facility manager for PASCO Scientific in Roseville, California, is one of Eriksson's many clients which have been able to share information with the

architect in a new manner. Under the classic design process, the client would provide the architect with programmatic information and the architect would respond with drawings for client approval. With Bietz and Eriksson, the design process was more iterative: the architect prepared the basic building design, the client downloaded the background, and developed a space plan, and the architect retrieved, reviewed and revised the client's plan. Eriksson remarks that clients who feel they lack drawing skills are now likely to use desktop CADD programs. In many cases a facility manager provides detailed equipment layouts through a truly hands-on involvement in the design. Both the architect and client benefit from the satisfaction of knowing that the design is proceeding towards meeting the client's needs.

Clients' technological considerations are by no means limited to the design process, but encompass a variety of facility-specific components. Nowhere is this more apparent than in the healthcare market. Franc Blackbird, AIA, spent many years as a representative of the UC Davis Medical Center before recently opening her own firm, Blackbird Associates. She stresses that "today we have reached a new stage in the impact of technology on healthcare construction." With the healthcare industry involved in fundamental changes, "healthcare organizations are looking for new ways to be more efficient and therefore more competitive." Technology offers solutions to the market's demands, and Blackbird cites one example, "the use of computers at bedside and nursing stations. These devices will record patient information, providing access to imaging and lab results, and [a] link to other hospital services...." The impact of technological changes "on the physical design of spaces and facility infrastructure will be significant." In all sectors of the

construction industry, architecture is evolving to include new technologies and respond to changing client needs.

Amid all this technology, preservation of the profession's human aspect remains a challenge. As many architects and clients attest, personal relationships are the key to a successful architectural practice. The strength of the bond between architect and owner must be capable of withstanding the most adverse economic, construction and physical conditions. The importance of cultivating personal relationships will increase as many functions of the design process become automated. With fewer personal contacts being made in new, indirect fashions, each communication between client and architect is much more important to building a strong working relationship. Bietz contends that, while technology creates substantial changes in "the way and speed with which communication can and should occur...good building design and planning still requires talented architects." Fortunately, some things do not change even in the context of a rapidly evolving environment.

In summary, the client requires concurrent increases in professionalism and a mastery of technology from the architect. Mark Vestrich, Chief Operating Officer of Luna Imaging Inc., puts it bluntly in an on-line discussion: "Technology does not make life easier in any segment. It's like we are going from clubs to crossbows to gunpowder in years instead of centuries. You may be a real good shot with a crossbow, but on average the guy with an M-16 will take you out." In this ongoing technological battle, clients need architects able to combine the hard science of information technology and the soft skills of leadership. Beneath these demands, however, lie fundamental skills which every client desires from an architect: the ability to listen, comprehend, synthesize and communicate.

POSTSCRIPT

This article was prepared using the same technologies that a client would use to find an architect: word of mouth and written documentation. In addition, a client today uses advanced technologies such as voice mail, electronic mail, and Internet services. The content of this article was shaped by the current availability of information in these resources.

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- CompuServe Time-Warner Dwellings Forum, Design/Architect section & library.
- Netscape Navigator, Yahoo! and other Internet search tools.

Joel T. Swift, AIA, is an architect employed by the County of Placer, functioning as the client for a wide variety of government sector projects. Susan L. Swift is a writer and environmental planner. Together, their firm of SwiftMAPPS provides project management, architectural, planning, and programming services to resource, industrial, development and residential clients. They may be reached on the Internet at Swift@CompuServe.com and <http://ourworld.compuserve.com/homepages/swift>.

Toward Sustainability: Unknown Destinations and Uncharted Paths

Raymond J. Cole

SUSTAINABILITY

Following the publication of the Brundtland Commission's report, *Our Common Future*,¹ sustainability has emerged as a widely held and necessary notion to guide all future human endeavors. Although sustainability is, and will remain, a difficult notion to define in substantive terms, the implications are clear. Sustainability will require that we become less wasteful of natural and human resources, take appropriate steps to maintain a healthy, productive planet and place greater worth on the welfare of future generations.

At the most basic level, ecological sustainability implies that future generations should enjoy continued *access* to resources. Although this typically infers *natural* resources, it is the *total capital*, both natural and physical, passed on to future generations that is of consequence.² Since buildings transform both renewable and non-renewable natural assets into human artifacts, this distinction makes it possible to position building design and construction more purposefully within the sustainability debate.³

Discussion of renewable resource use is only meaningful when set against the biological limits and production capabilities of the biosphere. Moreover, continued degradation of the biosphere through over-exploitation and abuse not only diminishes its ability to produce essential resources but also its ability to recover from such abuses. A prerequisite for sustainability is the

maintenance of the functional integrity of the ecosphere⁴ so that it can remain resilient to human induced stresses and remain biologically productive.⁵ Similarly, non-renewable resources, as finite assets, must be used or transformed such that they remain *useful* and *accessible* to future generations. In addition to reducing the amount of resources invested in buildings, they must become *useful assets* for future generations. The implications on the quality, longevity and reusability of buildings and the recoverability, reuse and recyclability of their constituent materials and components will be profound and require understanding new interrelationships and establishing new priorities.

AN UNCHANGED CONTEXT

If we asked ourselves what would a sustainable world be like, it would probably be characterized by one where there was a reduced and stabilized population, the culture of consumerism was no longer present, the economic framework was fully inclusive of environmental impacts, resource use/capita was significantly reduced and the concept of waste was eliminated. If this is so, then we are far from existing in a sustainable world and the idea of discussing 'sustainable' buildings is simply inappropriate at this time. Western societies still exist in the Baconian belief that through knowledge, humans can assume mastery over the natural world in pursuit of their

own interests. We have made an uncritical investment in science and commitment to the belief that technology will free us of the limitations imposed by the natural world.⁶

Architecture does not typically change until the context in which it occurs, changes. The context in which the design of buildings occurs does not currently support environmental responsibility. Despite the considerable advances in awareness of environmental concerns as witnessed by the rapid increase in research and publication, environmental responsibility remains a peripheral issue within the ingrained culture of consumerism. Where change is occurring, it is typically a 'superficial change layered on top of an unchanged core organization' instead of changing the core itself.⁷

A widely held position is that until natural disasters resulting from environmental instability set in, ecological issues will be compromised in the political realm by economic, social and military priorities⁸. This begs the question: how much evidence do we individually and collectively need that environmental instability has set in before we change our attitudes, place the environmental agenda higher in our priorities and act in a rational way to avert impending disaster? Seemingly the current evidence on the extent and alarming rate of environmental degradation: encroaching deserts, deforestation, acid precipitation, soil oxidation and erosion, species extinction, ozone depletion, greenhouse build-up...is insufficient.

A FUNDAMENTAL REASSESSMENT

To design differently, to design environmentally, responsively and responsibly will require a *fundamentally* different view of our relation to and place within the natural world. Our comprehension of the natural world will re-

quire a departure from the limitations of current science and the social, political and economic context which implicitly places human enterprise dominant over and essentially independent of nature. If we are to move toward sustainability, slowly, but surely, society will have to place increased priority on environmental issues through its mechanisms and institutions. Design will interpret these broader priorities and, within the context of specific projects, reassess what it holds to be of significance.

Addressing the environmental agenda will require an *explicit* restructuring of priorities and a *questioning* of a host of related assumptions which directly and indirectly shape buildings. It will require transcending professional boundaries between architects, engineer and all others involved in the production of buildings. Environmentally responsible design will affect and dictate if we build, where we build, what we build and how we build. This will probably occur over an indefinite period of reappraisal and change as society realigns its priorities and practices to meet the dictates of sustainability.

ENVIRONMENTAL DEGRADATION— AN UNCONSCIOUS ACT OF DESIGN

Building design has always been understood as a creative act—the transformation of material resources from disparate sources into specific places of utility and beauty. No architect would *intentionally* design a building which degrades the environment. Environmental degradation derives from a combination of conscious choices made within an societal context which has different priorities and ignorance of the environmental effects of design decisions. Much of the adverse environmental consequences of buildings derives from the collective impacts of a host of small human actions each made

unconsciously without knowledge or concern for their aggregate affect.

Design, as with other aspects of human thought, is shaped by and operates within the prevailing social and cultural paradigm, an unstated and silent hand which indirectly shapes and constrains each act of creativity. Many of the assumptions which guide design are seldom challenged—they are accepted as second nature. Like vernacular practices, strategies are absorbed as tradition and the reasons for making many design decisions are lost in the process itself.

TRANSITION TOWARD SUSTAINABILITY

Most of the prevailing environmental rhetoric, policy statements, and goals are directed at an idealized and futuristic view of sustainable design, and as such provide very little direction in terms of being translated into specific goals and initiatives. While it is important to provide a vision for contemporary design, more attention must be focused at providing directives for what is achievable and operationalizable—*now*. A fundamental division in environmental discourse should, therefore, be between those which can be translated into specific strategies, and those which cannot. Current environmental design strategies should be more appropriately cast within the framework of a *transition toward sustainability* which will extend well into the next millennium. Designing in a transition is different from when an environmental ethic is fully matured.

In the early stages it will be difficult to make progress in the face of the full weight of the existing paradigm. The priorities placed on environmental issues will be at odds with those generally subscribed to by society as represented by client's priorities and expectations, the short-term mentality amongst financial institutions and de-

velopers and regulatory framework which creates little incentive for more sustainable and environmentally benign buildings. Moreover, limited time, budget, and skills together with a host of other regulatory and code restrictions will continue to limit our ability to assimilate all pressing or relevant issues into a specific design project. Conflicts and contradictions are inevitable and understandable—prioritization and/or compromise is inevitable. Despite the significance of the environmental agenda, progress will likely occur incrementally by successively reassessing and reordering environmental issues as they relate to each other and how they relate to other design concerns.

LONGEVITY— COMMITMENT TO A FUTURE

The increase in discussion of life-cycle analysis and assessments and books, such as Steward Brand's *How Buildings Learn*,⁹ have stimulated and reinforced the importance of being conscious of the future implications of design decisions. Although it is relatively easy to understand the idea, it will also remain a difficult notion to operationalise given that we are existing in a period of rapid change, shortening of time horizons and when present design decisions have seemingly less and less future value.

Consideration of longevity points to the importance of distinguishing between strategies which result in *immediate* environmental benefits such as reusing existing buildings and materials, materials reduction, using materials with increased recycled content, low embodied energy etc., from those when the benefits are *deferred* to the future, such as designing for materials recovery, reuse, providing 'reserve' into buildings for greater adaptability to other uses etc. Whereas one can be relatively confident about gaining ben-

efits from the former, projecting into the future will a necessary requirement but always a questionable one.

RE-MAKING BUILDINGS

Improved energy standards and increased potential for recyclability and reusability in buildings constructed from this point in time *alone* will not be sufficient to realign the built environment towards a sustainable future. Attention must be directed at the use and upgrading of the existing building stock. Although the rehabilitation and reuse of buildings was originally a product of the historical preservation movement, today this growing trend also reflects a changing attitude towards resource use and a realization of the economic and environmental limits to growth. Indeed, the beginning of the next millennium will mark a "shift from the era of building to the era of rebuilding."¹⁰ Along with developing new skills, knowledge, and attitudes toward environmental issues, architects will have to learn to be more curators of the built environment rather than creators.¹¹

Existing buildings represent a vast source of future building material. Although it was created without a view for re-use or recycling of materials, a large portion will be salvaged and remade into 'new' building. Architects will be required to look creatively at re-using existing buildings, materials and components in conjunction with a host of new materials that will become available as the building industry examines innovative ways of turning wastes into resources.

Accommodating the environmental agenda will clearly affect the practice of architecture and the knowledge and responsibilities of design professionals and the relationship between them. This will be particularly acute when the emphasis of building design shifts from

new buildings to the major renovation of existing ones.

NEW QUESTIONS—NEW KNOWLEDGE

Sustainability will require transforming existing buildings and creating new ones to function, both individually and collectively, in concert with natural systems. But can we understand the complexity of the natural world well enough to emulate it at all successfully in the design of individual buildings and settlement patterns? Our current methods of understanding the natural world still rely on classical, reductive science. Dissection will never capture the synergy and intricate inter-relationships that distinguish the systems within the natural world. If, as San Giovanni della Croce argues, to reach the unknown point, one has to follow the unknown road¹², then both the way environmental problems are defined and resolved will be radically different than in the past.

Various attempts are currently being made to structure the range of environmental issues as a means of revealing the scope of significant considerations. However, while it is generally recognized that the subject area of buildings and the environment covers a wide range of issues, relatively little attention has been paid to the detailed linkages and relationships between specific issue areas nor their relative significance and priorities. Although substituting environmentally problematic materials with "greener" equivalents, the reduction in resource use and increasing the longevity of buildings and their constituent materials and systems will be central to environmental responsible building design, a *sustainable* building be recognized equally by the integration of the various environmental strategies as it is by the strategies themselves. Sustainable building design will require that equal, if not

more, attention be directed at the *inter-relationship* and *interaction* of various environmental systems and strategies as is currently being directed at individual aspects of the problem.

NEW KNOWLEDGE—ACCEPTING COMPLEXITY

The acceptance of the environmental agenda means first accepting and then internalizing and responding to its complexity. We have already witnessed research and publication which spans across a broad range of issues. It is too early to tell how these will be collectively translated and interpreted into a revised set of priorities for building design. Again we must recognize that we are in the early stages of recognizing the full complexity of environmental issues and must recognize the importance of retaining fluidity in our acceptance. Priorities will change as our individual and collective experience and knowledge matures.

With so many emerging fields of knowledge involved, the criteria for more environmentally informed design will enter into territory which is relatively uncharted. Within the proliferation of environmental information, the search for facts about environmental choices will place further pressure on practicing architects who are already faced with more information available to them to solve a problem than they can possibly assimilate.¹³ However, the search for “simple” environmental criteria and “rules of thumb” to give direction to design without investing time and effort to understand the underlying issues will prove to be dangerous. Simply stated—for the foreseeable future, we will be continually reassessing our understanding of environmental issues and re-educating ourselves on how to accommodate them in design.

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Raymond Cole is a professor and head of the Environmental Research Group at the School of Architecture, the University of British Columbia. Dr. Cole is currently president of the Canadian Green Building Information Council.

Mindful Planning for 2020

Larry Dodge

How, as architects and urban planners, can we assist in the planning and evolution of our cities in a society seemingly intent on short term eradication of commonality and long term self-destruction? A number of comprehensive studies have concluded that we are in the early stages of a growing environmental crisis caused by an escalating global population combined with the rampant consumption practices of the industrialized world. Growth of international business and expanded consumption across the globe, increasing urban population, and exponentially growing environmental crisis form the context for the evolution of our cities in the coming decades.

This essay describes likely influences on our cities by 2020 and proposes ideas—based on first principles—that can contribute to planning and developing the communities of our future to support humane and sustainable living. In the simplest terms, it assumes that architects can look past the individual building commission and recognize their work as primarily urban design and community building, with success in large part measured by how that building helps the community realize more humane and sustainable ways of living.

Western civilization, particularly over the past 500 years, has generally been guided by narrow conscious purposes ignorant of the broader consequences of human actions and ignorant of the fact that humans are integral to the earth's ecosystems. Only recently have some people realized, with our exponential population growth and

technological powers, that for our own survival we must address the broader consequences of our actions. Local ecological imbalances as recently as 1750, when the global population was 500 million, could be overcome by moving to a different place, or could be diluted or absorbed through a seemingly infinite planetary ecosystem. Today, however, people from a multitude of disciplines are realizing that a population of nearly 6 billion people, growing by over 900 million per decade, and using 10,000 days of stored solar energy per day, requires a vastly different consciousness to assure survival of our civilization.

Comprehensive global models prepared over the past 25 years indicate that we are now within one or two generations of massive global disruptions caused by the relationship between growing population, industrial production, food production, natural resources availability, and pollution. We reached this crisis through a system that, although it may have served apparently good purpose a century ago, is blind and "mindless," and which, if carried on insures the destruction of civilization as we know it.

We are already experiencing symptoms of this destruction as evidenced in the pollution of our air, water, and land; in the diseases of our bodies, and in the bodies of the fish and animals we eat; in the extinction of millions of species; the starvation in Africa; the depletion of rain forests and ancient redwood and hardwood forests; and the decimation of the ozone layer resulting in global warming.

We are in the midst of an exponentially growing global environmental crisis coincident with a dramatically increasing global business economy, where the less fortunate 80 percent of us in the U.S. will likely experience accelerating deterioration in everyday life over the next several decades and where the prosperous few will likely spend radically higher amounts of their energies isolating and protecting themselves from the less fortunate—in an ultimately futile effort. The environmental crisis will almost certainly lead to civil strife affecting everyone—reflected in starvation, disease, war, and ultimately the death of billions of people around the world within the next few generations.

BEYOND THE LIMITS

In 1992 the results of the World3 computer model were published under the title *Beyond the Limits: Confronting Global Collapse, Envisioning A Sustainable Future*, the third update of a model originally prepared for the Club of Rome in 1971. The update points out that we are in a condition of global “overshoot”—a condition that is unsustainable but under which signs from the environment are not yet strong enough to force an end to growth. Overshoot is signaled by a number of characteristics:

- Falling resource stocks and rising pollution sinks (the places wastes end up);
- Decreasing investment in human resources (education, health care, shelter) to meet immediate consumption needs in the G-7 nations, or to pay debts in Third World nations indentured to the World Bank;
- Failure of natural pollution cleanup mechanisms;
- Increasing diversions of capital resources and labor from final goods

production to exploitation of more scarce, more distant, deeper, or more dilute resources;

- Use of capital resources and labor to protect, defend, or gain access to resources that are increasingly concentrated in just a few remaining places, thus an increase in conflicts, especially over sources and sinks;
- Diversion of capital, resources, and labor from final goods production to activities that compensate for formerly free natural services, for example, sewage treatment, air purification, food control, pest control, restoration of soil nutrients, or preservation of species;
- Capital depreciation exceeds investment, or maintenance is deferred, resulting in deterioration in capital stocks, especially in long-lived infrastructure;
- Eroding social solidarity, more hoarding, and greater gaps between haves and have nots.

The World 3 report argues that our general ignorance may be fatally compounded by our specific ignorance of the impacts of *exponential growth*. The growth of lily pads in a pond illustrate this point: The pond will be completely covered by lily pads within 30 days; the lily pads double the amount of their coverage of the pond each day, and so the pond will be only half covered on the 29th day. Without an understanding of exponential growth one will likely be shocked to see the pond go from half covered to completely covered the following day. The growth of our global population is similar. There has been a greater increase of population in the past decade than the total growth from the beginnings of recorded history until the mid-19th century.

The report concludes that, “the human world is beyond its limits. The

present way of doing things is unsustainable. The future, to be viable at all, must be one of drawing back, easing down, healing. Poverty cannot be ended by indefinite material growth; it will have to be addressed while the material human economy contracts." Two major changes are advocated as absolutely necessary. "The first is a comprehensive revision of policies and practices that perpetuate growth in material consumption and population. The second is a rapid drastic increase in the efficiency with which materials and energy are used."

Beyond the Limits argues, finally, that a sustainable society is still technically and economically possible. "The transition to a sustainable society requires a careful balance between long-term and short-term goals and an emphasis on sufficiency, equity, and quality of life rather than on quantity of output—transcending self-imposed and unnecessary limits in human institutions mindsets, beliefs, and ethics."

How did we get to the point of such impending crisis? Gregory Bateson, in *Steps to an Ecology of Mind*, argues that industrial society has created a "Mindless State," organized around narrow conscious purposes that have thoroughly eliminated our awareness and ability to realize the consequences of our actions. He believes our present crisis of survival is traceable to three root causes: population increase, technological progress, and continuing hubris. Bateson believes all three contribute to the destruction of our world, but that the correction of any one can save us.

Our global population and technological powers are exponentially growing, while hubris continues. Proponents of the status quo may not believe there is a life and death crisis, or they may think that advancing technology can solve our problems. Those in the top socio-economic 20 percent in the

United States, living in isolated or walled new communities may believe they will be among those who will avoid the eventual massive civil strife, disease, and starvation. There is, however, ample and growing evidence that everyone's survival is directly related to our habitat, and that the loss of perhaps half of the planet's ten to thirty million species within the next few decades is more indicative of our future. The conviction that we can indeed halt our potential extinction as a human species can drive us to embrace new components to global planning.

COMPONENTS OF MINDFUL PLANNING

We need new bases for planning to survive the confrontation with our global limits, bases that heighten our awareness of our condition and of the consequences of our actions. These bases for planning our cities rest on two sources of first principles: ecological principles whose general characteristics are observed from natural ecosystems, and social principles whose characteristics are particular to the human species and, thus, "human nature" which cannot be observed in natural ecosystems. Toward the determination of such bases, I advance the following component principles.

We are integral to the earth's ecosystems. Therefore, we are dependent on the survival of our habitat. Learning from the *Beyond the Limits* studies, models in which "man" is to "conquer" nature will inevitably lead to ecological and ethical disaster.

Mind is a necessary characteristic of any entity that is to survive and evolve. Following Bateson, Mind is a necessary and inevitable function of the living complexity necessary to achieve any entity's equilibrium in the process of evolution. Social groupings of all scales

must be understood as distinct living entities that exhibit characteristics of Mind. Therefore, survival requires that living entities include each individual, small groups of individuals, sub-neighborhood areas, neighborhoods, cities, regions, nations, and global organizations. Each of these entities needs a means to sense its context, either directly or symbolically; each has a dense web of means of communication with correspondent parts; each has sources of internal energy such as civilization, culture, religion, pride, anger, fear, or patriotism; and each has the freedom, power, and capability to act in its perceived best interest.

Human societies, as integral parts of larger ecosystems, have to operate according to principles similar to those observed for all other life forms on earth. As we approach global environmental limits and use up the savings and excess capacity of the earth, we have to learn the characteristics of evolutionary survival of undisturbed ecosystems. We have to produce only recyclable products and eliminate all waste that is not food for another living entity. We have to drastically reduce energy usage and use stored solar energy for transition to and development of alternative energy sources. We have to prepare now for the end of the oil age. Reductions in energy usage will fundamentally change the nature of global business and tend to encourage local production of most goods, using local materials and creating increasingly self sufficient regions.

A nesting of limited powers and responsibilities should extend from selective international agreements, to national and regional policies, to city, neighborhood and subneighborhood groups, and ultimately to individuals. Each larger scale power should be limited to provide a context for the next smaller level to act as much as possible

in its own interest. Each level should be represented at the next larger level to allow influence of its context.

We need to incorporate knowledge of ecological cause and effect to understand the ramifications of social choices.

We are not, for the most part, a depraved people intent on destroying the earth and ourselves in the process. Most of us do not set out consciously each day to make life miserable for families in Iraq or Viet Nam, or for our grandchildren. We have literally no idea of the consequences of our actions. Yet, ignorant of the relationship between social principles and natural ones, we have been willing participants in the gradual development of our present ways of living, and have traded self knowledge and self sufficiency for a shimmering moment of material well being. Nearly all the decisions about everyday living in our neighborhoods are now made from some far off place. In the process most of us have lost our sense of self, our consciousness of community, our democracy, and our liberty. The promises and implied responsibilities of our constitutional government have become the essence of dreams and fantasy.

Moreover, much of the information we receive today is either blatantly false, incomplete, or one-sided, often motivated by extremely narrow purposes. Most of us are prohibited from making responsible choices in our own best interest because we do not have access to accurate information. Our present economic and social system is built on keeping the majority of us ignorant, irresponsible, and dependent on remote sources of corporate and governmental colonial power.

Community is fundamental to human social organization, fostering the emotional life and spirituality characteristic of "human nature."

If there is a solution to the destruction, it is based on rediscovering a sense of community in opposition to the new world order's rampant consumption of resources, ecological viability, and past traditions of collective and cooperative behavior. We have to evolve means to again acknowledge the primacy of human feelings and community, and more fully be who we are, connected to all life. We need to redevelop holistic states of mind, based on feelings and community connections we had as primitive peoples, and express them in the evolution of our communities today. We have to reestablish a dense web of connective linkages that can give each of us the awareness, energy, and capabilities to act humanely at all scales throughout our society. We have to again evolve communities that foster connections with others and our environment, that maximize direct experience of the consequences of actions, and that provide the opportunity for an individual to experience the breadth of life.

Humility is key to human evolutionary survival.

If we acknowledge that we have little understanding of the relationship between distinctly human principles of social organization and the ecological principles of nature that ultimately determine the survival of species, we can also acknowledge that our present ways of living are ultimately leading to our own species extinction. Given our lack of experience in living according to ecological principles and making good use of collective knowledge of human social experience, we need to expose ourselves to change, take responsibility for our actions, and, with humility and the guidance of our innermost feelings, use the energy latent in all of us to act mindfully.

For too long, architects and urban designers have hindered rather than helped our citizens set the context for more humane living. We have passively assisted and observed the disastrous and insane results of impersonal big business imprinted on the land, and then looked to remote and irresponsible governments for help of all kinds. We need to realize that taking no action is in fact taking an extreme action. The future, contrary to manufactured opinion, is our choice.

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Larry Dodge is an architect and urban planner with projects in 16 countries. He is presently working on a neighborhood planning manual intended to assist residents to recognize more clearly the likely consequences of development proposals on neighborhood life.

Non-Toxic Development?

Toby Levy, AIA

Non-Toxic? Energy Efficient? Renewable? Recycled? Life/Cycle Cost Effective? Profitable Development? Are these goals possible or mutually exclusive?

During the past several years, our office has designed several residential projects and work environments for clients who were “environmentally sensitive.” A materials library was assembled and a backlog of ideas and philosophies about environmental building were developed: we were looking for a project that lent itself to a full implementation of these goals. A mixed-use project, located on a mid-block park in the South of Market area of San Francisco, seemed like an ideal place to pursue a development with an “alternative” structural system and “non-toxic” construction materials and finishes. The general architectural goals were to scale the project to fit into the surrounding neighborhood and to express the “honest” use of materials.

The project included four residential townhouse units above two first floor commercial spaces and parking. The 13,000 square footage structure was considered to be Type IV non-rated construction, but was fully sprinklered because of its location in the Fire Zone.

Incorporating “healthful” products created an overlay of design, permitting, and construction challenges. When considering non-toxic construction, we defined it as the elimination of materials that were harmful to the inhabitants and to construction workers. This led to decisions to eliminate formaldehyde and fiberglass products, not

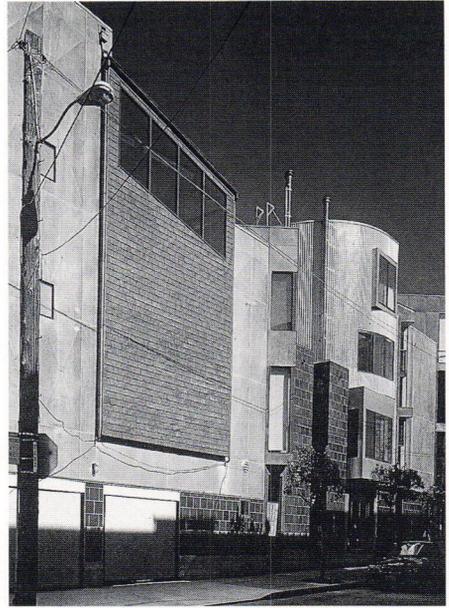
to specify materials that would require unhealthy conditions during their application, and to incorporate materials and finishes with low VOC ratings, and products with high post-consumer recycled contents.

As far as creating healthful interior environments, the goals were to minimize the conditions that would sponsor the growth of mold, dust mites, and the absorption of noxious odors or chemicals. Mold spores thrive in warm, moist spaces while dust mites live in and multiply in porous fibrous materials such as books, draperies, and upholstered furniture. This intention affected the layout of the units as well as the materials and systems selection. Materials like carpet could not be specified for they are “odor sinks.” These materials may be “natural” but their structure can retain odors since they can not be easily and effectively cleaned. Wall to wall carpeting, porous wall coverings, or other window or wall treatments are also considered to be such finishes.

Although an energy efficient design that exceeded the required minimums set by Title 24 was desirable, we found that this goal was often in conflict with the “non-toxic” building materials. The energy issues that could not be successfully addressed within the economic parameters of the project included the consideration of “embodied” energy of the construction materials; nor could we consider the energy consumed in the transportation of the materials to the project site. The comparison of materials with low “embodied” energy (the energy it took to

manufacture the product) and non-toxic building materials is best illustrated by comparing the use of metal framing and manufactured wood products such as TJI joists and OSB (oriented strand board) sheathing. It is obvious that beginning a manufacturing process with wood expends considerably less energy than starting with molten ore. The consideration of the energy consumed in transportation would have been extremely difficult to address since the majority of recycled and healthful products are not manufactured or distributed in California or its adjoining states. The transportation issue imposed other complications, for it required careful material ordering, layout, cutting and preservation, since replacement involved long lead times and costly shipping charges.

In the planning phase, the residential units were designed with cross ventilation in mind, locating the bathrooms where they could have exterior windows or operable skylights. The closet areas were vented to the outside where possible and were considered exterior spaces with louvered venting, permitting dry-cleaning and other odors easy dispersion. Bookcases and other storage areas were located off the public areas rather than off sleeping areas. Such locations allow tenants to have books and other dust collectors without being subject to them while they sleep, where most time is spent. Although it was part of the aesthetic to expose the metal joists throughout the interior, solid ceilings were provided in the sleeping, cooking, and bathing areas, to avoid the accumulation of dust in the channels of the metal joists. Gas-fired appliances, except for the range, were vented directly outside. In the selection of the structural and finish materials, installation and content of the materials were considered, but also their ability to be easily maintained so as to sustain their positive effect.



Side elevation at Jack London Alley.

In choosing the construction materials, systems were investigated that would limit the amount of different materials necessary, i.e. one layer of materials performing many tasks. In the 1960s this was the use of exterior plywood for both shear and exterior siding; in the 1990s, we attempted to employ “fiberboard” for the fire rating and exterior sheathing. This proved very difficult and ultimately not very feasible. The days of being able to rely on the single layer for the fire rating, shear and exterior sheathing are long gone due to fire and energy codes, requirements for longevity of exterior finishes, and waterproofing expectations.

The project also assumed a limited use of wood, unless it was visible and “responsibly harvested.” A standard design for this project would have required many “engineered” products, which are largely resin based. The argument that wood is a renewable resource and that its manufacture embodies little energy discounts the reality that the wood stock is largely not re

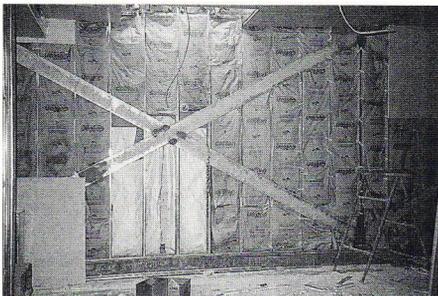
newable or replaceable within a lifetime with stock of comparable size and strength. Additionally, the elements that would have been included, such as plywood, TJIs, minilams, etc., are highly manufactured products and were not particularly available from local sources. Additionally, the select construction grade wood studs in recent projects have proven to have such high moisture content that their continued drying once incorporated into the building has resulted in numerous call backs for popping nails and twisting structure. The alternative of building with kiln dried lumber is not a cost-effective or energy-conserving solution.

Instead of wood, a structural system of lightweight and structural steel was chosen. Incorporating this type of system lead to some unforeseen challenges. The San Francisco building permit plan checkers were not comfortable with the structural system, not having plan checked it before, and they required drawings of many typical conditions. The wide range of metal gauges for the structural system lapped over two metal construction trades, structural steel and lightweight metal framing. This made evaluation of pricing difficult and required some deviation from standard practices during construction. Competitive pricing was also difficult to obtain because the project size for metal construction was considered small while the standard competitive residential and mixed use contrac-

tors whose own crews would normally construct such a project were not accustomed to building with steel. Hammers and nails were replaced by torches and screws. The structural steel frame and lightweight metal joists were augmented by seismic cross bracing with heavier gauge metal studs and joists. The metal bracing was necessary because the building codes do not allow "mixed structural" systems, i.e. metal studs and plywood sheathing. In some cases the horizontal and vertical metal strapping was as thick as 14 gauge. The additional thickness at the strap crossings required furring beneath the gypsum board on the most visible walls.

The floor sheathing of 1-3/4 inch tongue and groove structural homosote manufactured from recycled newspapers was the replacement for plywood. A more typical floor structure for metal framing would have been lightweight concrete over metal decking but that proved to be too heavy for the soil conditions. The wall sheathing for the exterior walls is 3/4 inch homosote panels. The challenges of incorporating homosote included its relatively large coefficient of thermal expansion and low structural gripping strength. To use this recycled product involved compensating for its deficiencies by adding nailing strips below the copper shingles and corrugated metal roofing and using a thin layer of plywood floor sheathing beneath the finish flooring. The homosote was not stocked locally but shipped from West Trenton, New Jersey. A surprisingly positive quality was homosote's performance during construction and its durability when exposed to the rain and temperature changes.

The walls were insulated with cotton batt and also required creative resolutions of unforeseen complications. The cotton insulation was manufactured by Greenwood Industries and



Cotton insulation and structural crossbracing.



Front elevation. Structural steel and light-weight metal.

driven to San Francisco from Greenwood, South Carolina. The shipment was delayed due to manufacturing difficulties, with our required sixty bales taxing their production schedule. The installation was then delayed waiting for their ASTM rating so that the San Francisco building department would find it acceptable. Upon arrival, the only other challenges were to devise a way to hold up the cotton batts between the stud installation and the gyp installation. Traditionally, stapling the paper backing to the adjoining wood studs would secure the batts but this could not work with metal, nor would regular tape hold up the heavy batts. The contractor resorted to trying many types of tape before settling on painter's tape. Due to its weight the cotton insulation was not appropriate for ceiling installation, so we resorted to expanded polystyrene above the homosote sheathing. The cotton insulation was one of the more difficult products to get, and the fear of not having sufficient insulation caused a safety factor of 20 percent, most of which was donated to the contractor's next project.

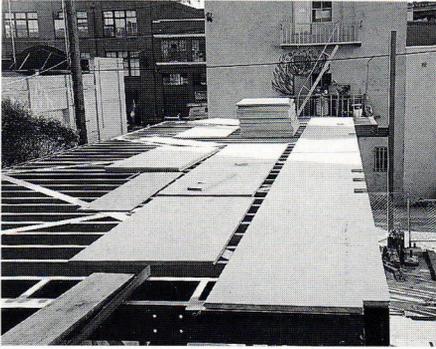
As mentioned above, in order to eliminate the "odor sinks" the flooring on the living levels was wood and on the bedroom levels was recycled rubber flooring. These selections also eliminated the padding and mastics associated with carpeting. The wood flooring was either a combination of "responsi-

bly harvested" board flooring of a variety of species or 4 x 8 panels of resin ply flooring. A pattern was made with the prefinished and post-installation finish. The resin ply was manufactured by Rodman Industries and was driven here from Marinette, Wisconsin. Here again the vagaries of ordering products from thousands of miles away left little margin of error in quantities and waste and damaged goods. The recycled rubber flooring, Regenpol, came UPS from Pittsburgh, Pennsylvania.

Two different approaches were taken to interior storage systems: minimization of all built-in cabinetry or its construction from formaldehyde free products, i.e. no plastic laminate, no melamine or plywood. The built-in cabinets were made of Medite II with solid uniform materials like maple butcher block or soapstone for countertops. The other direction was to use manufactured metal shelving and rolling metal carts whose home was below the countertops. Here again the location of blocking was critical during framing since the metal studs do not have the bearing capacity of wood and elimination of plywood sheathing meant the location would have to be precise.

The final finish was Glidden Spread 2000, a low VOC paint. Aside from finding the paint on sale because there was so little demand for it (it was priced at \$3.00 a gallon more than the standard paint), it was easy to apply. The ceramic tile of the shower surrounds included recycling samples from previous projects. For non-standard door sizes, doors were incorporated from other projects or procured from salvage yards.

There were other products that were considered for incorporation in the project, but a level of comfort could not be achieved. These included panels for the tub surrounds and exterior panels. The recycled plastic panels



Second floor framing. Light-weight metal framing and homosote sheathing.

arrived twice from Scranton, Pennsylvania, badly bowed and chipped, and time would not permit another attempt. The available cement fiber exterior panels mounting system was spaced in a way that would have required full blocking, which was also not feasible for a substantial part of the exterior.

As with the many “alternative construction materials” that were installed, most products were not stocked in California, nor available through “standard channels.” In spite of all the public discussion of “green” products and their advertising, most of these material were not available through “retail” sources such as Home Depot. Additionally, with today’s economic climate many of these products were being manufactured on an “as needed” basis, and, therefore, required long lead times, with surplus not returnable. The gap between “standard” materials and those with less mass market appeal is, unfortunately, growing.

Lastly, this discussion would not be complete without discussing the costs of incorporating the non-toxic materials. In general, including the cost of the steel structural system, the overall cost up charge for incorporating the “non-toxic” products was approximately 15 to 20 percent. Potential purchasers of the condominiums reacted to this “non-toxic” structure with only

mild interest. The purchase price was still determined, primarily, by location; albeit the sales price of over \$300/square foot was the highest for this neighborhood.

Toby Levy, AIA, is a principal of Levy Design Partners, San Francisco.

Establishing Priorities with Green Building

Alex Wilson and Nadav Malin

It is rarely possible to do everything we would like to reduce the environmental impact of building projects. It takes time to research alternative design and construction systems; new materials may not have proven track records; higher costs may be an impediment; or clients simply might not be interested. Therefore, it makes sense to figure out where our efforts will do the most good. Where should we focus most of our attention in designing and building structures that will have minimum negative impact on the environment?

Some designers and builders who emphasize sustainability have picked out just one aspect of green design—often it's recycled-content building materials—and hold that up as their flag. Material selection is one of the most visible green building strategies and often the easiest to point to—but it is usually not the most important. Deciding which measures are most important is no simple task. Here we take a look at some of the factors to consider.

FINDING A BASIS FOR ESTABLISHING PRIORITIES

Several related factors should be considered in making objective decisions about where our investments of time and money will do the most good in reducing environmental impact. First, we need an understanding of what the most significant environmental risks are. These may be global in nature, or more specific to your particular region or site. Prioritizing these risks is difficult because often they occur in unrelated fields, with no way to make direct

comparisons. Which is worse: the release of toxic waste, destruction of an endangered species' habitat, or stratospheric ozone depletion? Interestingly, scientists often come up with very different priority rankings than the general public on these issues.

The second critical factor is an understanding of how our buildings contribute to these risks, and how significantly the measures we adopt can help the situation. We may decide, for example, that ozone depletion, a global problem, is more important than the survival of a particular bird species. But if a building project we're working on could eliminate the last remaining habitat of that species—a major contribution to its demise—that's probably a higher priority than reducing our use of HCFCs, which are contributing incrementally to ozone layer damage.

The third factor has to do with the specific opportunities presented by each individual project. On some projects one can dramatically affect a building's performance in one particular area with very little investment, while addressing other impacts might prove very expensive and only minimally effective. Energy performance, for example, can sometimes be improved by simply adjusting a building's orientation, while using a recycled-content floor tile might increase cost significantly for relatively little gain.

Finally, we have to consider the available resources and agenda of the client. There are often measures that can be taken at no additional cost—some may even save money—to reduce environmental impacts. Implementing

such measures should be a “no-brainer.” Other measures might increase the first cost of a building, but save money over time. How far we can go with such measures, in length of payback and size of initial investment, depends a great deal on the resources and willingness of the client. In some cases a third party can be found to finance such measures and share in their savings. There are also measures that are important environmentally but don’t offer the building owner any direct financial reward. Pursuing these strategies depends on the client’s good will, environmental commitment, and interest in some of the less tangible benefits that may result, such as good public relations.

Given all these factors to consider, deciding which environmental goals to pursue on a given project might seem overwhelming. To provide a more concrete starting point, we’ve come up with a list for *Environmental Building News*, for which we serve as editors, that gives priority ranking to measures. Clearly the order is arguable, and for specific projects and climatic regions a different order will apply. All the measures listed below are important, and one should definitely implement any that are feasible within the constraints of a particular project.

A PRIORITY LIST FOR SUSTAINABLE BUILDING

This list—a builder’s dozen—reflects our sense of where you might look to get the most bang for your buck. Each item is followed by a few sample strategies for implementation, and a discussion of the likely cost implications.

Save Energy—Design and build energy-efficient buildings.

Ongoing energy use is probably the single greatest environmental impact of a building, so designing buildings for

low energy use should be our number one priority. Decisions made during the design and construction of a building will go on affecting the environmental performance of that building for decades to come through energy consumption. An integrated design approach can often take advantage of energy savings that only become feasible when the interaction between separate building elements is considered.

- In buildings with skin-dominated energy loads, incorporate high levels of insulation and high-performance windows, and make buildings as airtight as possible.

- Minimize cooling loads through careful building design, glazing selection, lighting design, and landscaping.

- Utilize renewable energy resources to meet energy demand.

- Install energy-efficient mechanical equipment, lighting, and appliances.

First cost is likely to increase, but significant savings in operating cost can often be achieved. Reduced heating and cooling loads may also reduce first cost of HVAC equipment, helping justify the expense.

Recycle Buildings—Utilize existing buildings and infrastructure instead of developing open space.

Existing buildings often contain a wealth of material and cultural resources. In some cases the workmanship and quality of materials that has gone into them is almost impossible to replicate today, making the restoration all the more valuable.

- Do not ignore the first priority above. When restoring or renovating buildings, maximize energy efficiency.

- Handle any hazardous materials appropriately (lead paint, asbestos, etc.).

Usually—but not always—less expensive than building new, these projects can be difficult to budget.

Create Community—Design communities to reduce dependence on the automobile and to foster a sense of community.

To reduce environmental impacts, we must address transportation. Even the most energy-efficient, state-of-the-art passive solar house will carry a big environmental burden if its occupants have to get in a car each morning and commute 20 miles to work. Since the 1940s, zoning and land-use planning have, in general, been impediments to, rather than supporters of, responsible transportation patterns.

- Design communities that provide access to public transit, pedestrian corridors, and bicycle paths.

- Work to change zoning to permit mixed-use development so homeowners can walk to the store or to work.

- Incorporate home offices into houses to permit “telecommuting.”

- Site buildings to enhance the public space around them and maximize pedestrian access.

Smaller and shorter roads, services lines and storm sewers should reduce costs. Obtaining zoning variances can be time-consuming.

Reduce Material Use—Optimize design to make use of smaller spaces and utilize materials efficiently.

Smaller is better relative to the environment, and no matter what the materials, using less is almost always preferable—as long as the durability or structural integrity of a building is not compromised. Reducing the surface area of a building will reduce energy consumption. Reducing waste helps the environment and reduces cost.

- Reduce the overall building footprint and use space more efficiently.

- Simplify the building geometry to save energy and materials.

- Design building dimensions to optimize material use and reduce cut-off waste. For example, design buildings on a 2 or 4 foot (600 mm or 1,200

mm) module. With light-frame construction, use 24 inch-on-center framing and headers sized to each opening.

Some additional design time may be needed, but overall, this strategy should save money, particularly with larger projects and multiple-building developments. Increasingly, we need to consider not only the cost of buying materials, but also the cost of disposing of what’s left over—by reducing waste we save both ways. A 4x10 (1,200 mm by 3,000 mm) sheet of 5/8 inch (15 mm) drywall, for example, which costs about \$8 to buy, now costs more than \$4 to landfill in some areas!

Protect and Enhance the Site—Preserve or restore local ecosystems and biodiversity.

In fragile ecosystems, such as old-growth forests or remnant stands of native prairie, this might be the highest priority.

- Protect wetlands and other ecologically important areas on a parcel of land to be developed—on some sites you should reevaluate whether development should be carried out.

- On land that has been ecologically damaged, work to reintroduce native species.

- Protect trees and topsoil during construction.

- Avoid pesticide use—provide construction detailing that minimizes the need for pesticide treatments.

- With on-site wastewater systems, provide responsible treatment to minimize groundwater pollution.

Some of these measures cost less than standard practice, others cost more. Maintenance costs with natural landscaping are often much less than for conventional practice.

Select Low-impact Materials—Specify low-environmental impact, resource-efficient materials.

Most—but not all—of the environmental impacts associated with building materials have already occurred by the time the materials are installed. Raw materials have been extracted from the ground or harvested from forests; pollutants have been emitted during manufacture; and energy has been invested throughout production. Some materials, such as those containing ozone-depleting HCFCs and VOCs, continue emitting pollutants during use. And some materials have significant environmental impacts associated with disposal.

- Avoid materials that generate a lot of pollution (VOCs, HCFCs, etc.) during manufacture or use.

- Specify materials with low embodied energy (the energy used in resource extraction, manufacturing, and shipping).

- Specify materials produced from waste or recycled materials.

- Specify materials salvaged from other uses.

- Avoid materials that unduly deplete limited natural resources, such as old-growth timber.

- Avoid materials made from toxic or hazardous constituents (benzene, arsenic, etc.).

Some resource-efficient products are available at no extra charge, but installation may differ from standard practice, raising labor costs.

Maximize Longevity—Design for durability and adaptability.

The longer a building lasts, the longer the period of time over which the environmental impacts from building it can be amortized. Designing and building a structure that will last a long time necessitates addressing how that building can be modified.

- Specify durable materials—usually more important than selecting low-embodied-energy materials.

- Assemble the materials to prevent premature decay.

- Design for easy maintenance and replacement of less durable components.

- Design for adaptability—particularly with commercial buildings.

- Allocate an appropriate percentage of building funds for ongoing maintenance and improvements.

- Consider aesthetics during design, and whether a particular style is likely to remain popular—the idea of “timeless architecture.”

Though not necessarily more expensive in all cases, building for durability usually does require a larger initial investment. Preventative maintenance also requires ongoing investment, though it is generally cheaper over the long term than repairs due to insufficient maintenance.

Save Water—Design buildings and landscapes that are water-efficient.

This is largely a regional issue. In some parts of the country, reducing water use is much higher on the priority list.

- Install water-efficient plumbing fixtures and appliances.

- Collect and use rainwater.

- Provide low-water-use landscaping (xeriscaping).

- Separate and use graywater for landscape irrigation where codes permit.

- Provide for groundwater recharge through effective stormwater infiltration designs.

Most of these measures will add to the cost of a project. Some savings in lower water and sewage bills and longevity of on-site septic systems can offset additional costs.

Make the Building Healthy—Provide a safe and comfortable indoor environment.

Indoor and outdoor environments are integrally related, and the health of the building occupants should be ensured

in any "sustainable" building. With many clients, this is the issue that first generates interest in broader concerns of environmental sustainability.

- Design air distribution systems for easy cleaning and maintenance.
- Avoid mechanical equipment that could introduce combustion gases into the building.
- Avoid materials with high rates of VOC offgassing such as standard particleboard, some carpets and adhesives, and certain paints.
- Control moisture to minimize mold and mildew.
- Introduce daylight to as many spaces as possible.
- Provide continuous ventilation in all occupied buildings. In cold climates, heat-recovery ventilation reduces the energy penalty of ventilation.
- Give occupants some control of their environment with features like operable windows, task lighting, and temperature controls.

Most of these measures will increase construction costs, but they often are easily justified based on the increased health, well-being, and productivity of building occupants.

Minimize C&D Waste—Return, reuse, and recycle job-site waste.

For more and more materials, sorting and recycling job-site waste is paying off economically, and it can certainly generate a good public image.

- Sort construction and demolition waste for recycling.
- Donate reusable materials to nonprofit or other community groups where they can be used to build or improve housing stock.

Additional labor to sort and recycle waste may be offset by savings in disposal costs, variable by region.

Green Up Your Business—Minimize the environmental impact of your own business practices, and spread the word.

In addition to creating buildings with low environmental impact, you should practice environmentalism in your own business, thus serving as a model for other design or construction firms.

- Purchase fuel-efficient company vehicles and promote use of public transportation and carpooling.
- Use recycled paper in your office; recycle wastes generated in your office.
- Use the design process to educate clients, colleagues, subcontractors, and the general public about the environmental impacts of buildings and how they can be mitigated.

Carpooling and public transportation can save money for employees, while reducing the number of parking spaces the business must provide. Recycled paper, for most applications, is only slightly more expensive.

FINAL THOUGHTS

In deciding which measures to pursue on specific projects, consider the relative benefits of the different measures. You might begin by customizing the list for your region. Then refer to your list as you consider each project, and identify the areas where you can do the most for the environment.

Often the most significant opportunities for benefiting the environment come from a careful integration of the design, taking advantage of synergies between building elements. The most elegant design solutions—those that reduce complexity while solving multiple problems—won't be found by considering each item on this list in isolation.

Alex Wilson and Nadav Malin are editors of Environmental Building News, a newsletter on environmentally sustainable design and construction, published in Brattleboro, Vermont, EBN@sover.net (email).

“Any Planner or Creator”: Architect by the Third Definition

Patric B. Dawe, AIA

As a kid I was excited to discover that *Webster's* had a definition for *architect*. It felt great to have found a term for what I wanted to do at that young age: design and draw plans for buildings. I didn't bother to read as far as the third definition, which is: “any planner or creator.” Fifty years later, this third one better encapsulates my life as an architect and is, perhaps, the definition we must embrace as we look toward the future of our profession.

When I was little, I sketched all the time; I'm still drawing, but it's only one of the things I do. My first architectural craving was to design a house for my family. It has been twenty years since my last residential commission, but as a master planner, I have designed residential communities. I spent several years as an architectural student learning how to design buildings, but I have spent more time as a manager and integrator of teams, each one an organization consisting of designers, planners, related professionals, and clients.

I received solid traditional architectural fundamentals as an undergraduate at MIT in the 1960s, learning to organize space, functions, and systems into architectural solutions. But the more I explored architecture, the more I was impressed with the powerful role the urban environment plays in shaping buildings. The possibility of using design principles to shape the public environment and facilitate human activities convinced me that planning was a compelling path.

Following the urge to understand how a city works and how to shape its

built form, I enrolled in Penn's Civic Design Program and studied with David Crane, Ian McHarg, Ed Bacon, and a host of urban specialists who helped me and other graduate architects develop the tools to read and manipulate urban complexity. As an urban designer, one of many actors playing city-building roles, I learned to leverage these skills to help create the physical framework of the city.

Recently, Myers-Briggs testing has confirmed my ability to identify patterns in complex environments, and to solve problems in a systematic way. This helps me to understand why I love designing a bigger physical environment than a building—it requires the same kind of organized thinking, but on a larger, more complex scale; for me, it is even more satisfying.

Traditional architectural tools have enabled me to take on a variety of non-traditional assignments. Having been trained as an architect, urban designer, and planner, I focus on projects involving physical planning or design of some aspect of the built environment. My experience is that of a generalist, not a traditional role for an architect. Being a generalist means I can adapt to many different types of projects. In doing so, I've evolved into a project manager who integrates the talents of skilled specialists, including architects, to solve a client's problems, whether architectural or not.

The following planning projects illustrate some of roles I have played.

Executed over the last two years, a series of Stanford University campus

planning projects for four different Stanford clients show the range of work possible with one large institution: reinvigorating the original Frederick Law Olmsted campus structure as a framework for future infrastructure and campus buildings; planning campus bus service, relating parking, commuter access, and campus-community travel needs; producing recommendations to get optimum returns from extensive leaseholds on Stanford lands; developing an integration model for campus infrastructure.

As principal of Community Design Group with La Canada Design Group and Gruen Associates, I addressed different phases of the conversion of Golden Mall, all requiring architecture, urban design, and planning. Our team was hired to design the public improvements for the Mall conversion, now built (designed by Lance Bird, with Gruen Associates as Executive Architect). We were further retained by the City to review developer proposals for the six block area on both sides of the Mall as private development came in.

My experience with private development around transportation facilities in Philadelphia, Buffalo, and Denver enabled my small firm, Community Design Group, to do two projects on the Los Angeles Metrorail, conceptual design alternatives and design guidelines for a dozen downtown development sites adjacent to Metrorail subway stations and for eight subway station development areas on the Red Line.

Consulting to Johnson Fain and Pereira on Norton Air Force Base Master Plan, San Bernardino, I joined a team that was addressing totally new problems. Within the first round of California base closures, this project had no precedent as it sought solutions to integration of airport operations, international trade, seaports and rail-roading, national and local politics, and new town planning, to define a future for the massive air base.

Leopalace Resort, Guam (also consulting to Johnson Fain and Pereira), tested my organizational ability. My responsibility on this large western Pacific golf resort, which was just beginning construction, was to set up and run the design review process, integrating a large team of engineers, architects, landscape architects, and golf course designers. To keep ahead of construction on the island, we integrated countless design decisions on every feature of the project through creation of an AutoCad "war map."

My career as an architect, urban designer, and planner has given me a chance to work with every building type, land use, and infrastructure system; in every scale from window details to the region; for clients including private homeowners, governmental agencies, developers, institutions, and other architects. My colleagues have included architectural designers, economists, transportation planners, landscape architects, lawyers, and other urban designers. Throughout my career I have held positions in a public planning agency, in architecture and planning firms of all sizes, and have established three independent practices of my own.

Harvey Gant has encouraged architects to play parts in building our communities by using our architectural skills and experience. An essential step in moving into these roles is to recognize how enabling and useful an architect's skills can be. When I first imagined being an architect, I did not realize that my goal would blossom into such a rich and varied life as an urban designer and planner. I look forward to further adventures in a field I consider to be very broad and full of wonder.

Patric B. Dawe, AIA, is principal of Patric B. Dawe, AIA, in Palo Alto, California.

Where Do We Go From Here?

Carol Shen, FAIA

As the architecture profession transforms itself once again as we approach the end of this century, the Editorial Board of Architecture California seeks to raise the consciousness of the AIACC organization by engendering discussion and debate about provocative, diverse, and practical topics facing our profession. Striving to fulfill our organization's highest ambitions, each member of the Editorial Board here offers thoughts to stimulate discussion, beginning with 1996 board chair, Carol Shen, FAIA.

When I decided to study architecture at Berkeley in the 1960s, I was looking for a meaningful way to make a contribution. Architecture was a field that I thought offered the opportunity to solve problems and influence the physical settings where people work, learn, and live. After over twenty years of practice, I still believe in the potential for well-designed environments to enhance our lives. Buildings can also be powerful symbols of our traditions and our culture, which is why the burning of churches across the country, this expression of hate and anger, is such a horror and outrage against our fundamental beliefs in freedom and faith.

Last year, Theodore Roszak wrote in the *Utne Reader* about the protest of the 1960s and the "historical continuity" between then and now. In that era, government had won World War II, sent GIs to college, sponsored the New Deal, social security, school lunches, and civil rights. Despite some extreme actions, the voices of protest were ones



of humanity and justice: Martin Luther King and Robert Kennedy and folk music filled the air. Was that a magic moment in time when many of us shared a vision about "good for one and all" and believed in the benefits of public education, public transit, public parks, and public good?

And now, three decades later, those railing against the government are the voices that we hear on talk radio; they are narrow-minded, fearful and mean. And in many an architectural practice today, we struggle to market our services, energetically meet deadlines and constrained budgets, keep lawyers and insurance companies at bay, make payroll, and solve the design and technical challenges our projects pose every day. Who and what purpose do architects serve? I see some only serving their own artistic vision, pursuing their individual, introverted desires for self-expression.

Others serve only the purposes of their clients, giving expression to their achievements or ambitions. This 1990s business of architecture can consume us, strip us of our ideals and principles, and render architects less and less relevant to everyday living and the general public.

I believe the profession's success or failure to influence our cities, communities, and environment depends on who we choose to serve. Harking back to my initial aspirations, I think the profession will become more relevant if we seek to serve "the greater good." The most successful and personally gratifying projects in our office not only meet functional and programmatic objectives; they have also improved their surroundings and created social spaces to enhance the way people interacted and felt within and around the project. A retail center, and a few blocks away, a theater complex reinforced Portland's entire downtown core; a new community center brought citizens of all backgrounds and ages together in Fremont; and a restored historic district focused new activity and life along the riverfront in Singapore. "Success" has meant not only good design in an artful sense, not only good returns in economic terms, but greater benefit and an enriched way of life.

The future of our profession could dim, with architecture becoming a luxury only few find they need or can afford, and architects being mere stylists, overshadowed in the building industry by developers, engineers, and contractors. On the other hand, if we can contribute to the strengthening of our communities, culture, and spirit and commit to creating enduring places for all of us and future generations, I think there is hope for the future. To quote James W. Rouse, "What should be important is to produce something of benefit to mankind.

If that happens, then the profit will be there." *Time* magazine described Rouse as "one master builder whose idealism, like his ideas, never flagged." I agree—idealism is the key to the future.

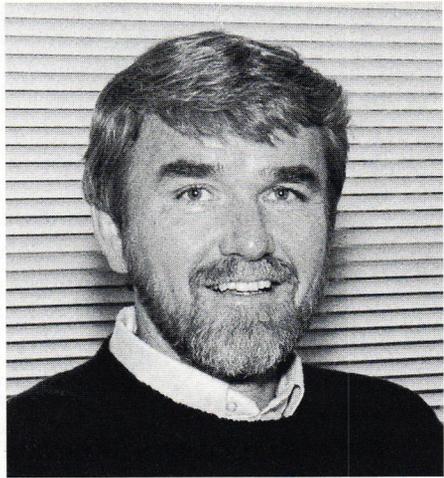
Carol Shen, FAIA, is a principal at ELS/Elbasani & Logan Architects.

Is There a Future for the Architectural Profession? Jumping the Curve

W. Mike Martin, AIA

The obvious answer to this question is “yes, there is a future,” but, you can’t get there from here. Both the academic and professional communities have waited, with great anticipation, for the Carnegie Foundation’s report, *Building Community: A New Future for Architecture Education and Practice*, by Ernest L. Boyer and Lee D. Mitgang (The Boyer Report). Released at the 1996 AIA Convention, and distributed to all schools and colleges of architecture in the United States, the report has been received as a “benchmark document,” prompting almost everybody invested in education or practice to form a task force.

On the surface this all sounds good. A closer look at the report, however, reveals that the academic community of architecture has become the focus for the failure of architectural practice. Architectural education is investigated from several perspectives, resulting in recognition of problems and suggestions for resolution. Yet the report that promised to evaluate the current state of architectural practice as a delivery system in contemporary society has little to say about it. The result is a set of assumptions which suggest that the “fix” is to educate a new generation of architectural graduates with contemporary knowledge, skills, and values to lead the profession forward. Not a bad strategy if you have fifteen to twenty years to wait for the results. This is not the case, however, and as a



community of academics and practitioners, we must act now to provide the necessary leadership to produce major changes to both the academic and professional communities of architecture or face further erosion of our influence.

By now you have either decided to stop reading or assumed that the writer is an academic not willing to take responsibility for the education of the next generation of professionals. This is not the case. It is my belief that architectural education must rigorously investigate its pedagogy and articulate a contemporary mission that can guide its faculty and students into the 21st century, with an assurance that they will be major players in establishing environmental outcomes. It is also clear that our educational enterprises are struggling to integrate into their teach-

ing and research agendas the technological tools and methods of the information age now required to manage the complex knowledge, skill, and values of tomorrow's professionals. The Boyer Report does represent a major benchmark by providing a template for the transformation of the enterprise. It provides us with a challenge to determine the role of design and design thinking in adding value to our everyday lives. Assuming we are willing to take this challenge, our influence is limitless. This requires not only "designing and making buildings," but establishing design itself as the element of all artifacts that distinguishes their value. It is in this context that I believe we have the opportunity to "jump the curve."

The future presents daunting challenges—global warming, bacterial mutations, urban decay, drug addiction, ecological erosion, resource depletion, homelessness, illiteracy, hopeless youth, and many other indicators that suggest major crises and chaos. In his latest book, *Playing the Future: How Kids' Culture Can Teach Us to Thrive in an Age of Chaos* (1996), Douglas Rushoff asks the question, "Is it naive or even childish to suggest that these may not be signs of doom at all, but only look that way? Could our inability to see our way out of what seems to be such a mess, be a problem of perception not fact?" To date, much of the effort to address these issues has been influenced by "positivistic" thinking—thinking based on the notion that there is a clear cause and effect relationship between events. For example, "if only educators would prepare students more appropriately for entry into practice, then the profession would be more able to address the perceived challenges of the future." This assumption is displayed in two characteristic ways: first, "if we could return to the good old days everything would be okay"; second, "if we can define where we are,

then we can project forward to a secure future with a solid foundation."

In 1970, Thomas Kuhn's breakthrough theory of "quantum jumps" altered the way many of us understood the process of change. He challenged the notion of incremental linear development as a means of understanding change. Instead, he posited the concept of "paradigm shifts," shifts governed by quantum jumps in the assumptions, rules, and methods for conceptualizing the processes occurring in reality. Throughout history there have been several of these leaps, i.e., the stone age to the bronze age, the machine age to the information age, from Newtonian physics to the theory of relativity. We are twenty years now beyond Kuhn's challenge to positivism, and we should no longer be approaching change with old concepts of mechanical linearities. This is especially important since we are now without doubt experiencing another paradigm shift. It is not a time to be afraid of unclarity or to grasp for formulaic "solutions."

In *The Leadership Challenge* (1995), James Kouzes and Barry Posner observe, "The cynics are winning. People are fed up. They're angry, disgusted, and pessimistic about the future." Articles in *Progressive Architecture*, "Can This Profession be Saved?" (February 1994), "A White Gentleman's Profession" (November 1995), and "The Intern Trap" (July 1994)—document this tumult within our profession. We know we are in the midst of a major transition with a yet-to-be-determined outcome. What is certain, however, is that our future will be influenced by the information revolution going on around us. What this influence will be is not clear, but we know it is happening.

We witness electronic technology not only revolutionizing the way we work but also the nature of the tasks we perform. There is more computing

power in the machine on which this article was written than existed in the whole world in 1950. The newest concept in the world of computing is the "client/server relationship," a shift in power to the user, as client. The currency of this power is information, its creation, dissemination, and management. Historically, access to specialized knowledge has been a primary province of a profession. Yet, this new relationship to information changes that context for professional practice, giving the client ever greater authority in the discourse that determines outcomes. As more players participate and contribute to the discourse, the coordination of knowledge, skills, and values becomes a major task, and management of the currency of information becomes a paramount source of power.

Thus, what appears as a chaotic state of affairs regarding professionalism, leadership, and intellectual capital is evidence of a deep, underlying, and abiding quantum leap in the fundamental conditions of our lives, both personally and professionally. They are no less than the signs of a new order, requiring rethinking of the core assumptions that govern values, commerce, economic models, technology, politics, and social structure. In order for leadership in this process of change to be effective, we must be bold in confronting the realities of this transformation.

The underlying message of the Boyer Report regards framing this transformation. As the study notes, "architectural education is really about fostering the learning habits needed for the discovery, integration, application and sharing of knowledge over a lifetime." The "architectural community"—educators and practitioners taken together—has "a long history of failure to connect itself firmly to the larger concerns confronting families, businesses, schools, communities, and society." These two observations high-

light our major concerns, but also provide us with opportunities, challenges, and agendas. The seven articulated goals for the profession identified in the report—An Enriched Mission, Diversity with Dignity, Standards Without Standardization, A Connected Curriculum, A Climate for Learning, A Unified Profession, and Service to the Nation—provide the blueprint.

If we can view this challenge within a conceptual paradigm that does not present education as the cause of contradictions evolving in the rapid transformation of practice, both the mission of the university and the role of the practitioner take on new significance, not built on the past but the future. If we can embrace current events and engage current issues, we can finally unequivocally "Jump the Curve." We can jump the curve to a new reality that does not assume a mechanical cause and effect, thereby scapegoating the presumed agents of causation, but rather bases itself on collaboration and respect in exploring new roles in environmental design. The journey has just begun, and there can be many pilots!

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W. Mike Martin, PhD, AIA, is undergraduate dean of the College of Environmental Design, University of California, Berkeley.

Meaning and Architecture

Allyne Winderman, AIA

The book will kill architecture...
Victor Hugo

How many times has architecture been declared dead? Do buildings, structures, and places still carry meaning at the dawn of the 21st century when almost everything else is virtual? Is this the age when architecture really will die? As architects should we still struggle to introduce meaning into our work—to convey new insights, inspire or create beauty? Most importantly, how and why does a community value its architectural resources? I contend that architecture cannot stand alone, that its meaning is dependent on participation and community.

Scene One: Five years ago...

Warner Brothers proposes to renovate and expand their West Hollywood studios. The plans call for the demolition of the Formosa Cafe, a tiny bar and restaurant located on the corner adjacent to Warner's existing facility. The Formosa Cafe, built in 1940, is a funky structure that includes a remodeled railroad dining car noted for its movie industry clientele and its strong martinis. As news of the proposed demolition spreads, a public outcry ensues—complete with pickets, letters to the editor, and television coverage. Over the years, movie stars and industry executives made the Cafe their hangout, and this modest place obtained such strong meaning that Warner Brothers plans are redrawn to save the building.

Scene Two: Today...

The archdiocese of Los Angeles decides to build a new cathedral on the



grounds of the existing St. Vibiana's, located at Second and Main Streets in the heart of Los Angeles' old downtown. The existing cathedral, built in 1876 when Los Angeles was a small town of just 10,000 people, is a modest building with a simple but inspiring interior and a small courtyard garden. When it was built, City Hall was two blocks to the west and the Union Rescue Mission moved in next door. Today, the area is "in decline," and people boast "I never go downtown." The archdiocese plans to demolish the building for a new cathedral more suited to Los Angeles' role as the city of the future. They choose Pritzker Prize winning architect Jose Rafael Moneo. The archdiocese contends that the new cathedral will catalyze revitalization downtown. The Los Angeles City Council votes 13 to 1 to remove the building's landmark status, designed to protect meaningful structures. The Los Angeles Conservancy fights the proposed demolition, but politics makes this undertaking seem futile.

Scene Three: Recent months, tomorrow... Wilshire Boulevard Temple, the oldest Jewish congregation in Los Angeles, is located on Wilshire Boulevard in an area central to the city but distant now from the homes of many of its members. A dramatic "Moorish" design structure built in 1925, the building is valued for its beauty and its history, but services are sparsely attended. The congregation purchases a property on the west side of Los Angeles to hold meetings to develop a day school. The temple's leadership promises that the building will always be a part of the congregation while reminding us that the temple has moved twice before to be closer to its membership and the congregation has maintained its integrity. The future of the Wilshire building is, for now, secure. Yet, whether the building can continue to have meaning to this congregation years after major activities have moved off the Wilshire campus remains to be seen.

The future...

These scenarios suggest that architecture alone is not the key ingredient that gives meaning to place. As architects we struggle to imbue our work with purpose. We hope to enlighten and inspire through the creation of tangible place. However, the success of our work is dependent on its relationship to its context. It is our obligation to look after our cities, to ensure that they remain vital to their inhabitants. We cannot neglect the center for ever-expanding opportunities on the periphery. If we do not meet this challenge, our work will atrophy with its surroundings and likewise become meaningless.

Allyne Winderman, AIA, is manager of Economic Development and Housing for the City of West Hollywood.

People and Design

Daniel Gregory



PETER CHRISTIANSEN

What is the role of a mass-audience magazine in promoting a standard of design? I guess one way to begin answering such a question is to describe what I do. As an editor for *Sunset* I am always looking for innovative, problem-solving designs that are also artful. I look for a combination of the practical and the beautiful, the familiar and the novel, an elegant simplicity. The age-old definition of architecture—commodity, firmness, and delight—holds true here. But in addition, the publishable idea—whether it is a concept, an approach, a technique, or a product—must speak to a broad readership easily and directly. News or uniqueness in a subject is often a plus. And regional character is always important, because part of our purpose is to record and celebrate what makes life in the West different from life elsewhere. You could ask, with one of the gargoyles in the Disneyfied *Hunchback of Notre Dame*, "Don't you birds ever migrate?" No, ma'am, we don't!

For *Sunset*, architects remain important because architects are problem solvers. And although we do not write for architects, we are interested in making architectural innovations available to our 1,430,000 subscribers. Architects lead us to stories. And sometimes architects are stories. Words like “useful,” “hardworking,” “fresh,” “inventive,” and “newsy” still describe what we are looking for in a subject. And we are definitely still in the business of helping our readers improve their residential settings. But today’s exponentially expanding technologies, burgeoning fields of product development, and rapidly evolving cultures and economies have made our task more complex and more urgent. We need to be the homeowner’s “Yahoo” for negotiating the many worlds—from virtual to physical—of home improvement.

But even as we email, fax, and computer-simulate our way toward the 21st century, certain design principles remain steadfast for us, I think. These principles are most clearly embodied by two of California’s most influential mid-20th century designers: landscape architect Thomas Church and architect William Wurster, whose work was recently reexamined in a major exhibition at the San Francisco Museum of Modern Art. Often collaborating, Church and Wurster helped promote the concept of environmental design, which in *Sunset* terms meant house and garden becoming extensions of each other. One *Sunset* headline from the 1950s vividly illustrated the point: “They live all over their lot.”

Wurster once said, “Art doesn’t necessarily consist of remote things by dead persons, art consists of lively things done with objects you use every day.” And Church’s well-known credo was the disarmingly simple: “Gardens are for People.” The point is that they took a free and flexible approach. Design without dogma, that was the key.

They respected the client, and still managed to make mundane realities memorable. They combined the regional and the modern, the assertive and the modest. Such things remain important to a magazine interested in helping readers cope with contemporary life in the increasingly suburbanized and frenetic, fin-de-siecle West.

Do we ever achieve our goal? Three letters about last year’s Western Home Awards issue (a program sponsored with the AIA) will have to serve as an answer. One reader wrote, “I compliment the editors of *Sunset* for the ‘Western Home Awards’ and the issue devoted to its coverage. The choices were excellent, ranging from modest dwellings to the monster house that at least was well executed.” Another reader wrote, “Regarding the nineteen award winning homes—nice but boring, one interior looked like another, so many rectangles, hard surfaces. Ho, hum and ho and hum. More interior variety next year please.” And the third wrote, “Every time I show a picture of one of those houses that has won an award to my husband, he always says ‘nice—but where do the pet food dishes go?’ Also, the laundry situation is a very large consideration.” We’ll keep our search engines busy for our non-architect readers, and we’ll leave the Ziplight on for you, too.

Dan Gregory, PhD, is senior editor of Sunset magazine.

Practice Is a Daily Struggle: Reconsidering Obstacles and Options

James Bonar, FAIA

I could not have predicted but a small part of what I have experienced in my thirty years in the profession, and I have no knowledge of what the future will bring us as architects. But a reconsideration of some of the issues I have encountered may offer some insight.

As a way of beginning, let me clarify my point of view. My observations are very much colored by my interests. What delights me about architectural design is the possibility to enrich the lives of people, particularly common people, pursuing their daily lives in an urban environment. While there is a tremendous potential market for this service, there is very little effective demand for it, i.e. my would-be clients can seldom muster the resources necessary to address their building needs, and worse yet, they only vaguely understand the place of architects in fulfilling these needs. Fortunately, over the years I have identified, perhaps even cultivated, individuals and groups that successfully put together the energy and capital to build the kind of projects that interest me. In the past dozen years there has been a proliferation of community-based not-for-profit housing builders that comprise much of my client base. In the main, these clients take pride in the qualities their projects offer the users and are willing to structure adequate design costs into them.

I am currently in a collaboration of seven architects, three of us are principals. We design housing and other urban facilities for mostly very low income people or people with special needs. The practice is a daily struggle to



produce good design in the face of obstacles that seem to increase with every project.

THE OBSTACLES I SEE

Building Regulation

I once thought I knew the codes reasonably well and could predict an interpretation in the plan check and inspection processes. Today, the number of regulatory agencies that review our work is staggering; the people who administer the reviews are rigid; and the body of regulation itself is in runaway dynamic. In Los Angeles, as many as six separate municipal departments or divisions conduct independent reviews. The nature of regulation has moved inexorably toward more detailed prescriptive measures, administered with increasing attention to minutia. Today the slightest deviation from the codes, which may in fact result from vagaries

or conflicts between provisions, requires memorializing the decision in a "modification," which is not in fact a modification, but simply the documentation of an interpretation of equivalency. At a minimum, this procedure requires the decision of a supervisor, but more often the review of the supervisor's supervisor is necessary before the matter is addressed. At a recent Dan Garcia presentation on regulatory reform in Los Angeles, the architects in the room whistled and cheered their agreement with dramatizations of the Byzantine process here in this city. Yet efforts to streamline the process appear headed toward further layering and intricacy. The exception in this trend at the Los Angeles Building Department counter is that permit applicants are now referred to as "customers," and appointments are more or less honored. This consideration may sound silly, but it is the first hopeful sign I have witnessed toward collaboration rather than overt disdain of applicants.

Technology of Design and Design Documentation

When I was a student, I witnessed a CADD demonstration at M.I.T. and fell in love with the possibilities of designing with computer tools. I was disappointed then to learn that national priorities and market economics would delay widespread use of them in architecture. Today, I know far more about these machines than I ever wished to know, and, yet, they resist assisting me with my architecture far better than I imagined they ever could. I immensely enjoy the ability to deal with complex geometries, and I love the increased control I sometimes have over the design. The investment we have made in a data base, particularly alpha-numeric material, makes our history readily available to help us tackle new assignments. At the same time, however, I am

often overwhelmed with data management and infuriated by incessant compromises in gaining access to appropriate hard copy and other useful presentation material. The interface with the graphic programs remains awkward and our experience so spotty that working in teams, even small teams of two, brings to mind the Tower of Babel. Our firm lacks the financial resources to keep our equipment current, much less the requisite training to effectively use it.

Sidestepping the bothersome issues of insufficient computational power, half-baked software, and limited abilities, it appears that computers are lifting architects out of a labor-intensive low-tech craft based on teamwork and dropping us into a new industry that is highly technical, capital intensive, and ultimately lonely.

Extended Project Cycle

I was surprised to learn recently that the Empire State Building was constructed in one year. My projects, at about 1/100th the scale, take on average more than a year to construct. The period required to design and finance projects has also increased due to the greater complexity of building programs, regulatory requirements, project finance, the adversarial construction contracting processes, and the pursuit of social objectives through publicly assisted construction projects. One consequence of the longer project cycle is that architects are afforded fewer opportunities to learn about design and construction through trial and error. Indeed, some younger associates take pride in their knowledge of other roles in the building process and several have transferred to those jobs, with increased compensation, I might add.

Relationships and Trust

Architectural services are viewed more as commodities than as professional

services. In the selection process, there is a very strong tendency to seek the lowest so-called "responsible" price for architectural services in contrast to seeking the most effective and compatible collaborator with the assumption that all competitors will agree to much the same compensation. In another illustration, we successfully completed a project for a client where non-design difficulties were experienced during construction. While the client praised the design and our dedication to the project through its difficulties, a reduced design fee was nonetheless sought on the next assignment.

Even more difficult than clients are financial partners, particularly public agencies that see architectural services as only one line item on a project proforma and have little comprehension of the scope of our work beyond basic services. Increasingly, these financial partners play a role in architect selection and in determination of compensation. In one example of this insensitivity, the architect representing the agency questioned the fee for planning development right assistance by ignoring the owner's need for it.

Notwithstanding the consideration of talent and expertise, the relationship between owner and architect is built on trust. If that trust is not present and difficulties arise, such as errors and omissions by the architect and its team, the client speaks about remedies like claims against the architect and utilizing the architect's insurance, to meet its additional expense to overcome the deficiency. Since the compensation awarded in such projects has never appreciably exceeded the expenses of delivering the services, and since insurance companies do not pay 100 percent of a claim settlement and nothing for the time involved in defending against them, even one such claim would likely be ruinous. Fortunately, we have thus far maintained a relationship of suffi-

cient understanding and trust to avoid claims. However, I understand that I am bucking the odds.

WHAT CAN ARCHITECTS AND OUR PROFESSIONAL ASSOCIATIONS DO?

I fear that I may have painted a picture of architectural practice as lonely and foreboding. In truth, I sometimes see it that way. But on many other days, I am satisfied with my choice and would likely repeat it. My associates and I have been privileged to receive recognition for our efforts, but the occasional praise from fellow professionals or the community does not sustain me. I am moved more by the stories of the people who find something special living in our buildings. I am pleased to come to work when I think there are others there who share my values, are dedicated to the effort, and enjoy one another's professional support. At such times I imagine what is possible for us to do.

Demonstrate Our Talent

Demonstrate to public agencies and private financial institutions that competent architectural services, including construction observation, are necessary to successful urban projects and that the nature of the collaboration between architect and developer indicates that fees, as the primary basis of selection, is antithetical to successful projects.

Experiment With Construction Arrangements

Experiment in forms of construction delivery that diminish the adversarial relationships generated by what has become the traditional bidding process wherein a low bid is the primary basis of contractor selection. Since in a competitive situation, the lowest bid is likely to be lower than costs of doing the work, the selected contractor must

proceed to recover overhead and profit through attacks on the adequacy of the architect's plans. It is difficult enough to build with a cooperative spirit.

Competitive procedures actually risk the outcome and—to the extent that the individual architect has its act together and collects for the additional work—costs more.

Educate Broadly About Liability

Begin product liability education to differentiate one-of-a-kind buildings constructed from incomplete plans from those buildings and other products that are carefully engineered and tested before they are released for use.

Also educate the development community to expect architects to correct deficiencies in their plans and designs rather than to expect architects to make developers whole through the use of insurance.

Extend Award Categories

Establish awards programs to recognize architects and owners/developers engaged in constructing "background" buildings in addition to those "landmark" buildings. As it stands today, architects who do not have the opportunity to design landmark projects, yet execute competent works that add substance to the physical landscape have no opportunity for recognition from their profession, and, being aware of this, they do not participate in awards programs. If efforts were made to recognize the many facets of architecture, as the Academy of Motion Picture Arts and Sciences does, more architects would work harder to do good work and the AIA would likely attract a greater rather than a diminishing number of members.

Pursue Regulatory Reform

Begin working with building officials and architects for improvements to code provisions and to procedures for

regulation. The structural engineers, perhaps because they are from the same profession as the primary building officials, worked together on committees to review seismic regulation following the 1994 quake. We should not leave the future of regulation to the development community.

Popularize the Variety of Roles Architects May Play

Teach students of architecture the different roles that architects play, in particular, the difference between a practitioner and an architect representing a public agency, financial institution, or developer. Usually, there are many designs that adequately address a program or urban design issue. Generally, the architect in the design chair is in the only position to evaluate all the considerations related to a design decision. Usually the architect in the reviewing role has not had an equivalent level of responsibility in practice, but does not realize it. With so much specialization, we need now—where we did not once need—to give students a clearer view of the roles they may choose and the opportunities and implications of each.

We must start to lead the development community toward better architecture or be lead by them into a narrower and narrower scope of work for architects and an increasingly degraded built environment.

James Bonar, FAIA, is a principal of Cavaedium Architects in Los Angeles.

Comments on the State of the Practice of Architecture

Allison G. Williams, AIA

I've never designed a house or any project smaller than 250,000 square feet, though a corporate headquarters is a home of sorts with the similar issues of image, affordability and, in the '90s, exit strategy in tact. Therefore, an opportunity to offer global comment on the state of the profession of architecture could, for me, become a dangerous journey into a realm outside of my own direct experience or exposure.

To avoid that possibility, I would rather note several reflections from my perspective at mid-career in a corporate practice that has expanded its focus and augmented its marketplace dramatically, and I believe, positively since my academic era twenty years ago.

There is a definite and ongoing shift towards the profession's influence on and involvement in the design of places, spaces, and things that matter to a broader segment of the population, and a recognition of the appropriate place for the private and often intensely personal act of design.

We are freshly re-committed to the public realm, designing buildings and spaces with major urban design implications and highly programmatic agendas. The door has opened for true collaborative interaction where we as architects—still perhaps the caretakers of the vision, the big picture—accept and exploit the idea that we are but one of many significant players. We are learning the power of The Team.

Architecture and Urban Design have become fused and inseparable in



the realization of large scale urban interventions.

Architecture is a business. We must value our time. Profit and artistic pursuit need not be contradictory. The design build team strategy for project execution, for example, is definitely part of our future and when it works, good design can still prevail within it.

We know that ideas must be tangible, accessible and explicable to an expanded audience because the society at large is more engaged in and aware of its physical environment than it was twenty years ago.

And finally, though our responsibilities continue to broaden, our passion for architecture as an art must still be the main ingredient that we bring individually and collectively to the plate to insure our future involvement, respect, and leadership in shaping the environment.

POSTSCRIPT

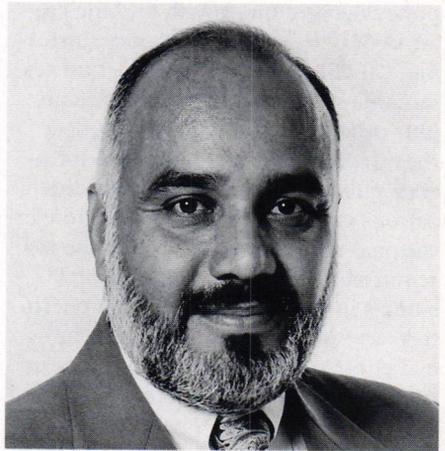
As a reminder that the perception of value in our contribution to the public realm is yet to be fully understood and appreciated, I offer this excerpt from an *AIACC Alert* (compiled by Philip J. Bujakowski, Director of Governmental Relations) organizing opposition to the “stock schools plans” bill, which passed across my desk as I completed my final paragraph.

AB 2895 [would] require the State Department of Education to develop an inventory of stock school plans for use by School Districts around the state and substantially eliminate the use of private sector architects on school plans....It represents an attack on the profession of architecture by setting in statute the “dumbing down” of the architect’s role and importance in the building process—if stock school plans are okay, then so are stock courthouses, libraries, prisons and other public facilities....

Allison G. Williams, AIA, is an Associate Partner at Skidmore, Owings & Merrill, San Francisco. She was 1995 Howard Friedman Professor of design at the University of California, Berkeley.

Expectations for a Future

Stephan Castellanos, AIA



The future of the architectural profession rests solely in its ability to inform, educate, and create a more architecturally literate public. This is growing more difficult as public expectations for a better future decline, but clearly the future of the profession is inextricably tied to the future of towns and cities and neighborhoods and all other places that define community. Some might claim that this is obvious and that architects are meeting the challenge, however, architects are rarely present when public policy as it relates to the built environment is formulated. Architects are rarely present when general plans are approved, when land use policy is discussed, or when the instruments that pay for public infrastructure are created. Arguably, very little separates the creation of public policy from the creation of the place. Communities are built and grow as a

result of policies debated by citizen leaders who generally are not architecturally literate.

Architects for too long have been placing structures in a landscape of someone else's making. Singular objects do not define community. With public expectations for an improved quality of life currently not extending too far beyond one's front door, the need to inform and instruct—to lead in policy debates on growth and the creation of places that are at once nurturing, capable of building pride, and sustainable—is the architect's challenge. Our practices must change to reflect the advocacy that is required to influence public policy. Professional organizations can support this effort and educational institutions can create the zeal required to engage as design professionals in the public process, but architects as individuals must accept the social contract with our communities to serve not only as form givers but as citizens.

The promise of creating change and improving the quality of life in cities via design rings hollow when one considers where in the process architects inject themselves. More emphatically, collaboration and participatory design processes, which logically should stem from an informed public discourse, have not been the architects' forte. Architects rarely resist the narcotic lure of designing the object, a reactive act, and fail to participate in the debate that gives rise to the opportunity to create form. Object orientation is excessively emphasized at all stages of an architectural career (education, internship, practice). Teaching and developing understanding, effectively communicating and participating in the development of policies that affect quality of life is at present a much more important role for architects to pursue.

We all deserve beautiful and livable places, but in the final analysis,

the product of the architectural process is not the object or even the spaces between them, but the informed perception of those who occupy them.

Finally, in addition to engaging in the formation of public policy affecting the built environment, architects have an ethical obligation to participate in the discussion of social policy. Our cities indeed are a reflection of how we relate to each other. Policy debates on education, health care, or the environment cannot be separated from the act of building. The architectural skills of integration and synthesis so needed by society will place architects in the center of debate and in the process create a more relevant profession.

Stephan Castellanos, AIA, is a partner of Derivi Castellanos Architects in Stockton. He serves as vice-president for Communications and Public Affairs for the AIACC and ex-officio member of the Editorial Board of Architecture California.

The Architecture of Architecture

Lian Hurst Mann, AIA



Throughout human history people have needed shelters within which to live and build societies. For centuries people have worked to meet more adequately their shelter needs. Some have chosen to become architects because they believed that there were better shelter environments and worse shelter environments and that they could design the better ones. Architects have worked at this while civilizations have grown, societies have developed, and economies have expanded.

Historically architects have thrived under the patronage of the wealthy for whom they designed “better” environments. The masses of people have lived in what are—despite romanticism—the worse environments, stripped from their right and their ability to design and build their own shelters and not benefiting from the work of architects.

Through many different historical periods, architects have designed societies’ monumental shelters—from pyramids to cathedrals to palaces, from forts to commercial centers and corporate headquarters. This architecture has reflected the “spirit” of its age; inherent in this spirit were the dominant economic and political forces of the era. Societies’ shelter patterns were shaped by politicians, planners, developers, and architects with a consciousness and vision reflective of these forces. In turn, these environmentally instilled patterns have shaped the consciousness of large populations.

This process includes us. Most of us who are architects today, or students or teachers, have entered into the profession in order to reflect the spirit of the “free world” era—democracy, free enterprise, modern capitalism, and modern architecture. As architects, we have been attempted to be the master builders of modern society’s shelters.

The forms and patterns of all shelters that shape the physical environment are directly dependent on the land use patterns of the property on which they sit; our own are no exception. Most people have control over only a very small portion of the physical environment—the inside of their apartment, the color of their house or car, the variety of artifacts they can display around them. The land owners are the essential shapers of our environment and, therefore, have important power in shaping people’s conscious-

ness. Controlled by the property owners, the physical environment is not meeting the needs of most people.

Wrenched with confusion and corruption, metropolitan areas are unable to support ever-increasing urban populations and unable to understand and deal with the problems of urbanization. The cities are in crisis. The urban centers are decaying. The economic base is weak. The middle and upper classes have, for the most part, moved into the suburbs, leaving the poor and third world working class in the central city. Most of the urban environment is dehumanizing. Buildings are expensive and inefficient, and people don't like them.

Cities have always provided "exciting" design problems for architects. The problem of creating a beautiful city for people to live in has filled the fantasies and sketch books of many designers. Some architects have striven to design, to build cities that would meet the shelter needs of the masses, but most of their work has gone from the drafting boards into architectural history books because there was no economically feasible or politically possible way to commission these projects. Increasingly, architects, city planners, and city politicians have demanded public funds for housing programs and urban renewal. Funds have come for housing demolition and some low to moderate income housing, but mostly for land speculation and development. In the United States today, architects find themselves actually designing these "worse" environments for the bulk of people, while continuing to design the better ones for those whose business it is to accumulate and develop property. Currently, neither the people nor the architects have control over the built environment. This is the reality of an environment designed to "shelter" monopoly capitalism.

Ultimately, architects know this, but most continue to cling to a mysti-

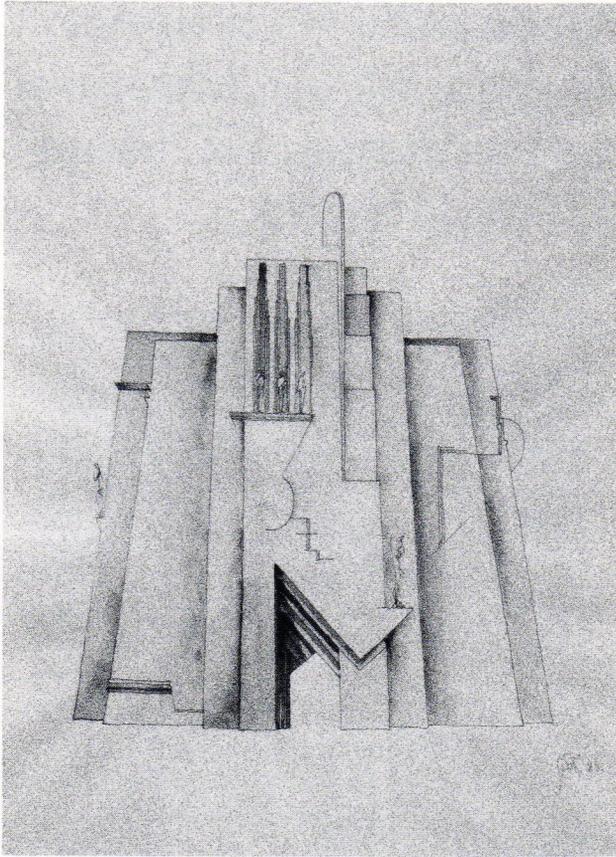
fied view of the architecture profession that makes it possible for them to continue to see their work as meaningful and evade more fundamental questions about the nature of architecture practice.

Modern society, modern monopoly capitalism, and modern architecture have been accompanied by the growth of modern architectural practice. Throughout the lifetimes of the last two generations of architects, we have watched the shape of architectural practice change from single designer dominated enterprises to professional firms based on team work. We have watched the scope of architectural commissions expand into every possible project type, and the scale of architecture projects grow from small buildings to large urban centers. And we have watched the controlling power of the architectural firm in the construction industry contract.

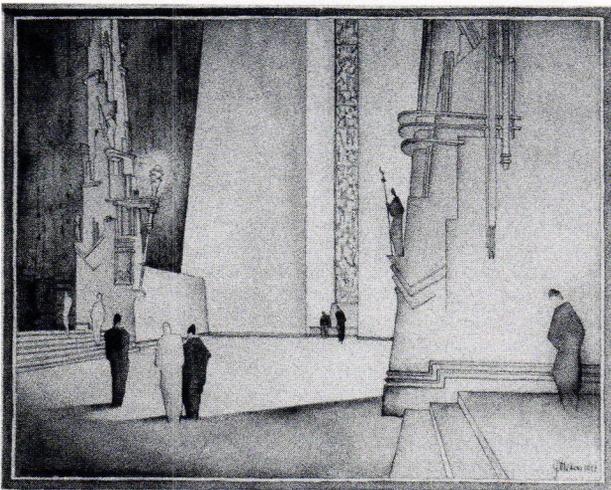
At present, architectural practice is a relatively small, competitive, professional service business existing within an economic system of increasingly big businesses and operating under the influence of many forces external to the "good design," "better environment" goals of the profession. In our modern era of expanding monopoly capitalism, it is important to understand the economic, political, ideological superstructure in order to understand how architectural practice functions in the United States today.

December 1974

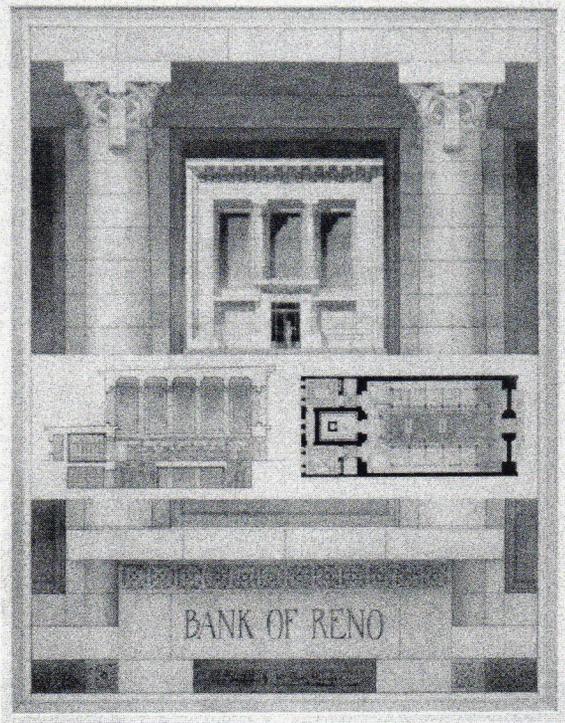
Lian Hurst Mann, PhD, AIA, is editor of Architecture California. This excerpt is part of a larger text, Building Shelters in a Corporate Society: Toward a Political Economy of Architectural Practice in the United States, Department of Architecture, University of California, Berkeley, unpublished, 1974.



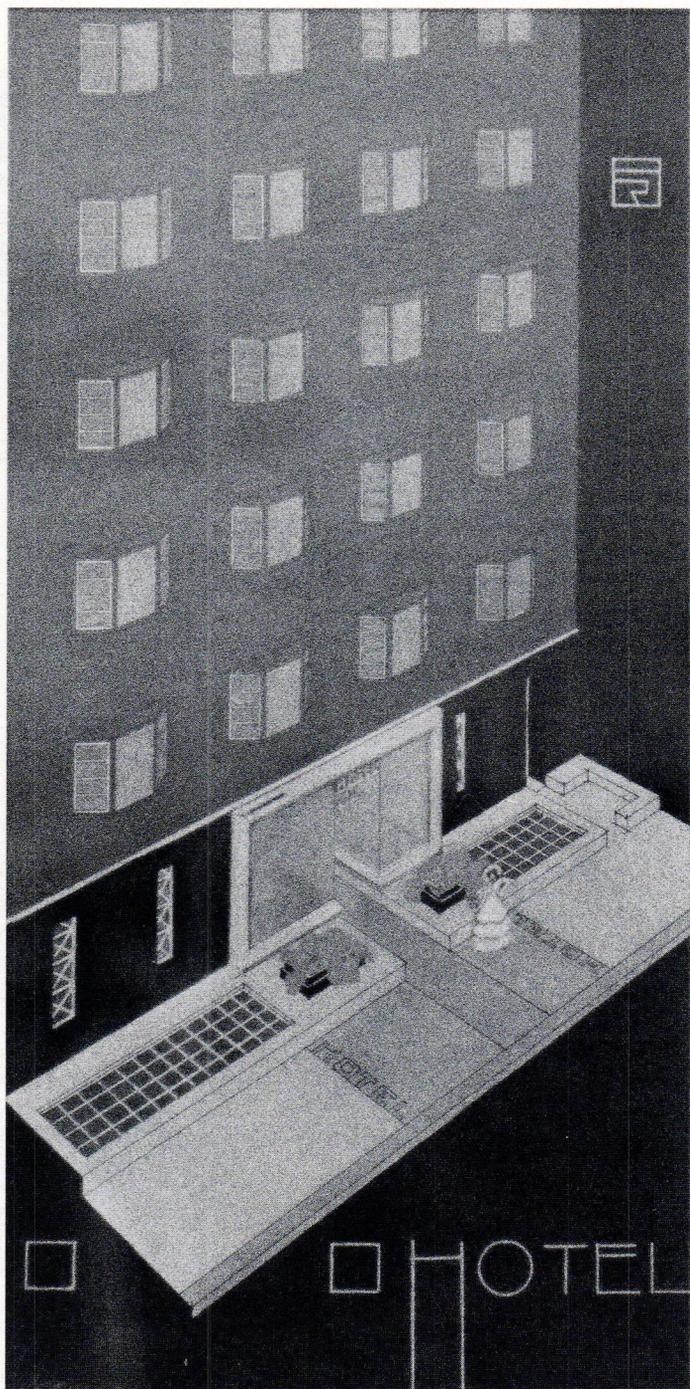
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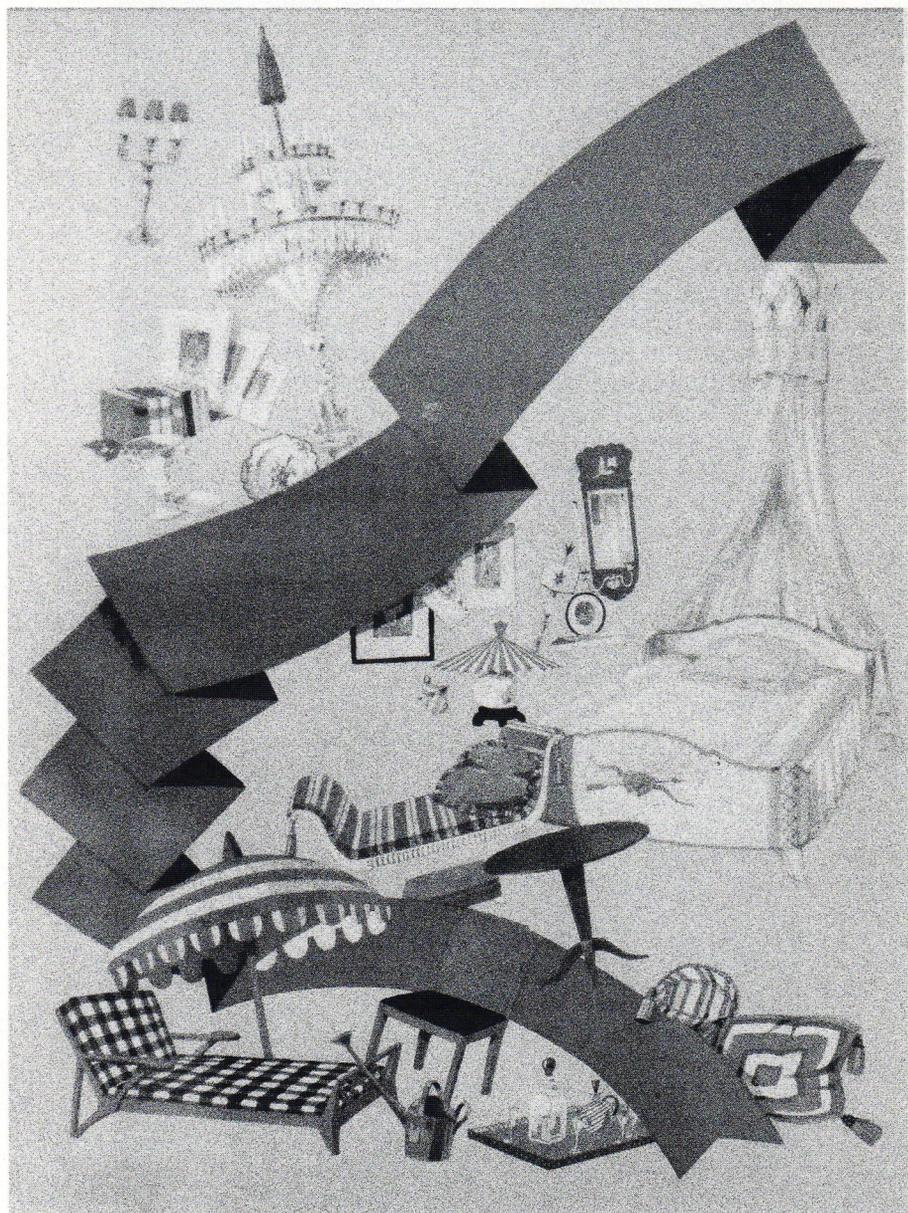
David Gebhard's "Gift of Art:" Sketches from the Architectural Drawing Collection, UC Santa Barbara Art Museum



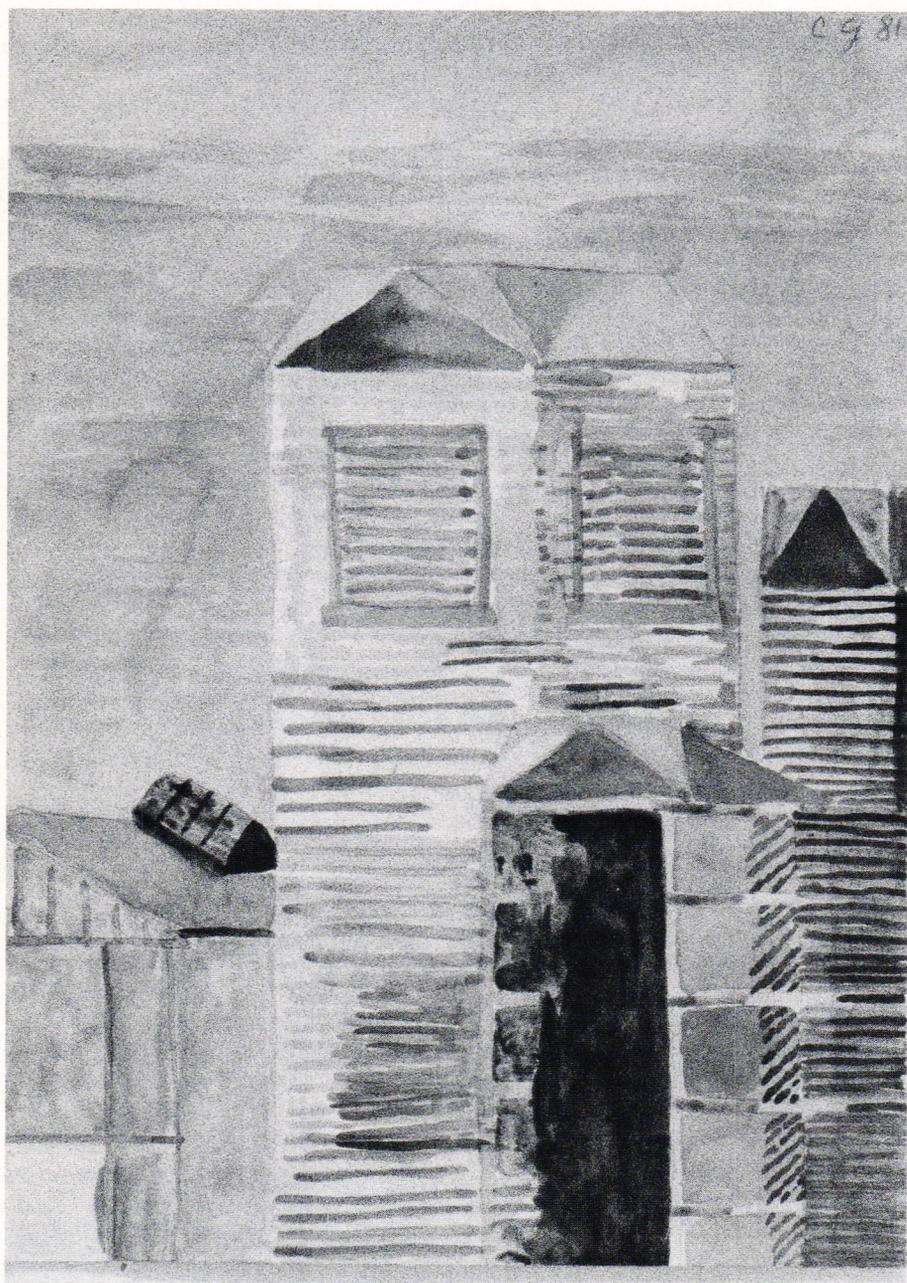
etcetera frontispiece, Jakob Detlef Peters, *Studies for a Motion Picture Set*, 1923. Ink and watercolor on paper. Gift of Ursula de Swart. This page, William G. Purcell, *Bank of Reno*, 1905. Graphite and ink on paper. Promised gift of the Gebhard Family Trust. This series of sketches from the Architectural Drawing Collection of the University Art Museum, University of California, Santa Barbara, which was built and administered by the late David Gebhard are on view as part of the exhibition "The Gift of Art: Past and Presents," June 29-August 11, 1996. "Not concerned only with masterpieces of architecture, although he wrote perceptively about all of them, David Gebhard was an architectural historian, a conservation activist, and a historian of the vernacular, the everyday poetics of social identity....By the wide scope of his interest, he probed deeply the crisis of values that is now reaching us at an acute stage, and which he saw as a factor requiring social connection, identity, and community relationships....A great enthusiast and great friend, he was an ideal inspiration for students. He established and was Curator of the Architectural Drawings Collection at the University Art Museum, of which he was also Director for many years. The collection of drawings is a resource attracting students across America and abroad, rivaled in scope only by the collection at the Avery Library of Columbia University....David Gebhard's concern for uniting a contemporaneous logic of imagery, forms, and myths remained central to his vision of the continuity and the function of architectural history. Without the joining to human function, symbols are empty." Excerpted from Geoffray Holroyd's Tribute to David Gebhard, April 14, 1996.



R.M. Schindler, *Unidentified Hotel*, Chicago 1915, in collaboration with Ottenheimer Stein and Reichert. Colored chalk, gouache, graphite on paper. Gift of Mark Schindler.



Julius R. Davidson, Cover Design for *House Beautiful*, 1925. Gouache, graphite on paper. Gift of Julius R. Davidson.



Charles Garabedian, *View of City with Gray Sky*, 1981. Watercolor on paper. Ruth S. Schaffner Collection, 1995.15.

Dreaming Architectures

Jose A. Pizarro

In the lunar universe—a fantasy of unexperienced relationships—one lives with uncertainty in constant search of something not quite known. Within this metaphor, the sun, commonly understood as a source of enlightenment, produces rather a blinding light, an excess of empirical evidence so dazzling that it precludes creative insight.

In a world too complicated to live in, the architect often takes refuge in the presumption of certainty provided by reproductive architecture, abandoning creative work. Pedagogical structures teach the architect to reproduce history with a more or less modern language, to live as if playing a role that reinterprets sequences from the past that have become codified. Project discipline could, however, be an initiation process into the creative lunar universe of *projective architecture*, culminating in architectural compromises that contribute to evolution in spite of the “dazzling” environment.

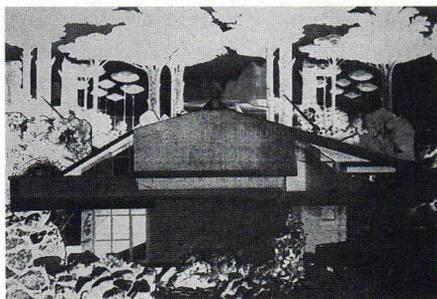
The deductive knowledge gained from reproductive architecture comes with a guarantee. However, it operates with a kind of logic akin to computer analysis—proven effectiveness in scientific learning but insufficient elasticity of thinking to be able to generate an advanced design. Advanced design requires innovative mental activity, different from the capability of deducing conclusions from established principles.

A pioneering project—a projective architecture—appears as an oracle, conceived from within areas still hidden in the brain. But it goes beyond forecasts; it actually configures the future. Like the hero of classical myth

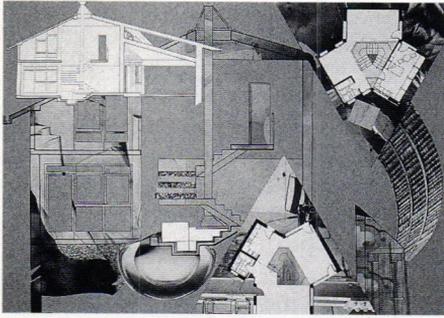
who invariably rebels against determinism and chooses his own destiny, the creator who will continue to be an essential component of today’s design world will flexibly persist.

In analyzing creation as both product and process, three specific characteristics may be derived: *effective surprise*, *internal harmony*, and *liberation from previous typologies*.

Effective surprise is achieved by the production of new associations by means of the capacity to select innovative connections from among trivial ones. The unexpected innovation can hardly be perceived as different by an unready society. The forerunning or pioneering trait of a design is relatively difficult to recognize. In certain cases, emphasis on the formal expressivity of the design has the power to startle, thus generating more uncertainty than enthusiasm; yet an appropriate focus will allow us to differentiate innovation from eccentricity. The curiosity it provokes can help avoid instinctive rejection and enable the attention required to perceive its relevance. The eventual exploitation of the innovation will reveal its ultimate valuation. The essence



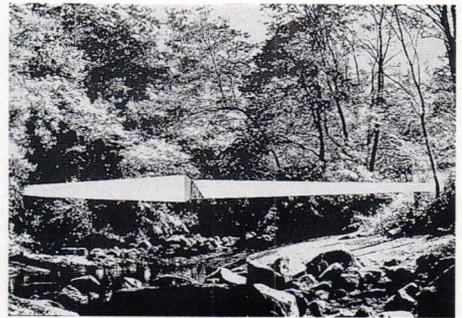
Triangular House.



Triangular House.

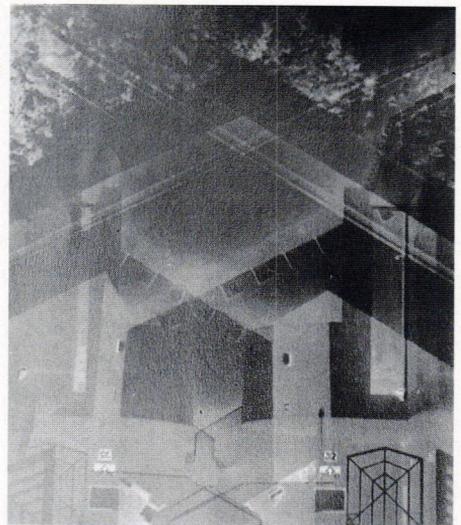
of its quality rests in its individual or social usefulness, either in practical terms, in the invention of unusual relationships, or in the illumination of new principles. An indicator of the transcendental character of new spaces is the behavior they generate, seen in the way an innovation in architecture is lived (although this requires a long period of experimentation and analysis before acceptance can be achieved). The attitude of the creator will thus be motivated by the creative experience of the search rather than by less probable recognition. In general, this is the case, although we should not discard specific circumstances in certain cultures in which the need for change brings a new value to novelty, such as great depressions or the turn of a millennium, an era of explorations or, sometimes, certain professional climates.

Internal harmony—the appropriate proportion and correspondence among aspects—requires a formal order in relationships. This in turn means a certain level of subjection to previous canons. This may seem contradictory, but it would be insane to forget the atavistic power of history. There will be a proportionality between the form and the manner and immediacy of its acceptance. However, in formal research, new combinations and links can impose themselves with a tenacious defense that can accommodate tastes. Another, less heroic, strategy consists of seasoning the project with

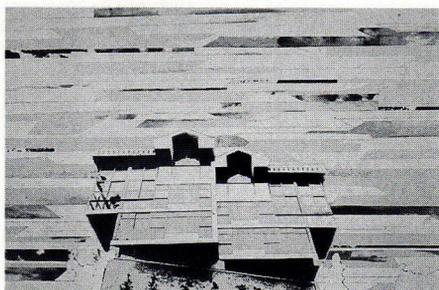


Amezola Park.

obsolete elements taken from the past. We can observe that a general acceptance of the ordered rational approach in architecture has allowed some contemporary architects to introduce personal and unusual plastic contributions. Even today, this can be maintained as a reason for acceptance in spite of the fact that the rational model is so irrational that it reduces rationality to a style. The true internal harmony of the work will eventually depend on the architect's ability to achieve authenticity, expressing his personal vision of now with his own language. In this case, modern or classical styles will become superfluous qualifiers, because it is entirely possible



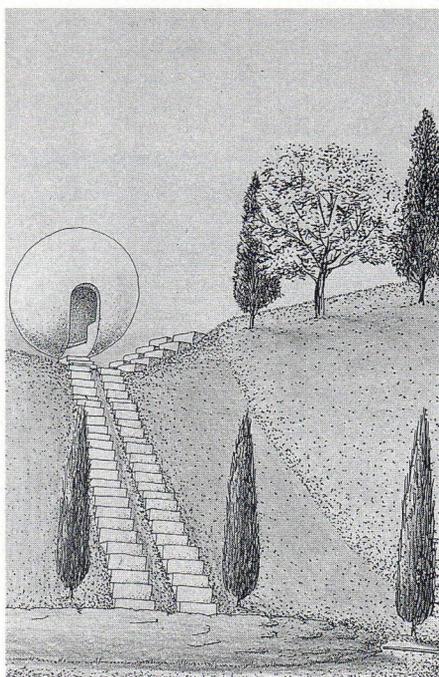
Iktaza Pub.



Leze-Alde House.

to use old languages to create the present in architecture.

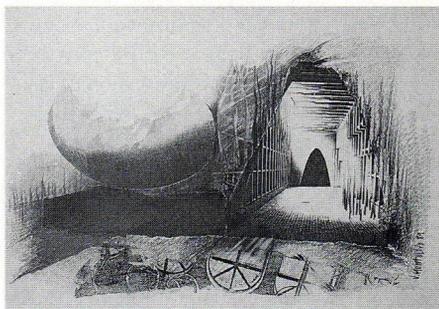
Freedom from previous typologies is prerequisite to creation, but how can we seek the unknown? By understanding creativity as a state of mind, the researcher's work becomes less random. Relaxation from tension allows us to recognize findings. The dictatorship of routines induces the individual to maintain form, perception, interpretation, and use of things within the narrow limits of variability. Overcoming these enables novelty. The fertility



Full Moon Garden.

of inductive non-reflexive associations is well known. To make these associations, it is necessary to reestablish the relationship between stimuli and sensations. Creativity, as an attitude, then, requires mental flexibility. In this process there is a peak moment when inspiration appears, provoking illumination.

Relating mental ductility and emerging thought or illumination, psychoanalysis locates the germ of creation in dreams, which are free of the shackles of reality principles and are



Funeral Architecture.

particularly motivated by fantasy. The liberation from inhibitions and self-conscious maturity frequently results in the emergence of inspirations from dream-like mental states in which the subject is free of the fetters of deductive thinking. The future is not written, it is blank, unfinished. However, it exists, with its own reality, in the most complex and unexplored areas of the brain. Stirring this hidden knowledge, psychic states that go beyond the borders of reflection, generate illuminated messianic personalities. The person possessed by something that never manifests itself clearly feels trapped by ideas. True, there is no clear dividing line between such states and psychopathological ones, recognizable by imbalance and the loss of an accurate critical ability to discern the absurd from the shrewd. But flexible persistence maintains a commitment that is, at the same time,

free from any strict proposal. Such flexible persistence manages without disintegrating those tensions occurring between rational thought and creative intuition.

Architectural projections, which are non-reproductive in character, assign a decisive responsibility to formal research.

Dreaming is tied to sensations in the suggestion of space, fleetingly lighted by forms and details acting as expressions of displeasure in the construction process. But going, at times, beyond the intensity of extrasensory communication can be oppressive because of its disproportion, resulting in an awareness based on unconscious experiments. Then, architecture becomes abstract and turns lyrical in a two-folded, single-minded process in which projects are constructed in dreams and dreams are constructed.

Jose A. Pizarro is an architect and professor of architecture at the Technical School of Architecture of San Sebastian, Guipuzcoa, Spain.

Confessions of a Magazine Junkie: Is Architecture Journalism Possible Today?

Eric C.Y. Fang, AIA

When composing an earlier version of this essay for the Harvard GSD News special edition on Design Publishing, Eric Fang wrote to our Editorial Board about the importance of Architecture California as a forum for discussion among practicing architects. His essay places this need for a forum within the context of current developments in design publishing.

As a young liberal arts student in the mid-eighties, my first issues of *Progressive Architecture* were awaited with great anticipation. Each issue would deliver to my doorstep something new, a glimpse into a rarefied realm where all news was good and all skies blue (literally), a relatively easy and pleasurable acculturation into my chosen profession. In the years since, I've subscribed to many other journals both domestic and international, and have even edited one myself. Still, with the recent news that *Progressive Architecture* would cease publication, I was somewhat taken aback by the lack of disappointment I felt at its demise. For even by the time I entered the profession, *Progressive Architecture* like most of the other national magazines had long since ceased to play a very meaningful or compelling part in professional practice.

The problems with these publications lay not so much in what was included in their pages as what was not. Especially conspicuous was the lack of realism and depth in how the maga-

zines portrayed the development of the built environment as well as the design process. Other players in the process in which I was taught architects were supposed to take a leading role, such as planners, developers, institutional clients, city officials, the insurance industry, landscape architects, engineers, and industrial designers, and contractors were hardly mentioned. And the magazines almost invariably portrayed architecture as the seamless creation of some master form giver rather than the complex collaboration that we were more likely to find in practice.

As my design training broadened my exposure to new developments around the world and sharpened my critical faculties, the magazines' limitations as forums for the exchange of ideas also became apparent. The conventional format of organizing feature articles around "pictorials" of completed buildings proved more often than not too superficial in content and format to serve as a vehicle for exploring or explaining design investigations. The parade of glossy photographic images that were the mainstay of these features often seemed about as real or germane to practice as the airbrushed spreads found in the pages of *Playboy*.

Most dispiriting of all was the absence of strong editorial viewpoints in any of the national magazines and their seeming reluctance to engage in or sponsor discussion about issues facing professionals or the public. The last two years of *Progressive Architecture*

were an exception of course, but *PA*'s demise as well as the commitment and independence found in European journals such as *The Architectural Review* and *Lotus* only underscored the lack of passion and depth in the American journals. Furthermore, the national magazines' reticence extended to practitioners themselves who rarely seemed willing to put forth and stand behind their own ideas, or for that matter to criticize those of other practitioners.

The causes of these shortcomings become evident when one browses through their pages. Given the sheer volume of advertising dedicated to this exterior finish system or that manufacturer of glazing products, how could any of these publications report responsibly on the building products industries? Developments such as the recent mergers that have eliminated competition and design options in critical industries such as roofing and waterproofing—which could arguably have more of an impact on architecture than any architect would care to recognize—have been effectively eliminated as news items. And when was the last time an architectural publication took the lead in uncovering a defective or hazardous building system—or for that matter a misguided real estate initiative?

At the same time, the glossy, too-good-to-be-true quality of the photographic spreads belie the architectural profession's symbiotic relationship with the media. As many of us who interned at some of the more media-savvy firms quickly learned, architects use the media, and the media uses architects. Firms furnish magazines with material and information about their projects, and magazines in turn provide valuable exposure and nonthreatening coverage. Such relationships are not so uncommon these days. But even in this era of "spin or be spun" sophistication about media manipulation, architects'

use of publications for marketing purposes has allowed them to escape critical scrutiny and public exposure in a way that creative figures and policymakers in other fields can only envy.

Finally, even the national magazines' trend toward increasingly pluralistic—if opinionless editorial programs almost seemed natural, given the exploding knowledge base and high degree of specialization we discovered upon entering the job market of the '90s.

One is tempted, as Herbert Muschamp suggested in his article on the demise of *Progressive Architecture*, to ask whether it is worthwhile to get worked up over what are, after all, trade magazines. But unlike other fields, the architectural profession neither benefits from the scrutiny of an independent press nor does it support peer-reviewed journals. As a result, these trade journals are the de facto professional journals for most of the profession—the primary means by which most architects across the country keep up with both news about and developments within their field. Thus the characteristics of these magazines not only inform how knowledge is produced and communicated within the profession but also play a role in how the profession communicates to the broader public.

Consider again the trade magazines' reliance on photo essays of completed buildings. Despite the recent vogue in academia of the concept of architectural design as a form of knowledge, both academic and professional publications have been largely unable to find a vehicle that could adequately communicate the peculiarly architectural type of research that occurs in professional practice and design. Academic journals such as *Assemblage*, *Perspecta*, and *Harvard Architecture Review*, mainly offer essays on theo-

retical topics that most professionals find impenetrable, while the trade magazines have continued to rely on pictures. This dual failure has limited the development of the type of culture of critical inquiry and investigation that other professions such as law and medicine consider essential. Photo essays remain the default mode for the communication of design ideas and explorations, encouraging an unselfconscious appropriation of images rather than a more reflective use of this knowledge. Communication of technical knowledge is meanwhile, ceded to the construction and building products industries.

One other unfortunate effect of these trends has been the architectural community's diminished voice in public discussions about the built environment. On the one hand, professionals seldom seem willing to commit themselves to taking and defending positions in public. And on the other, the fact that academic critics have rarely had to, or been given the opportunity to speak outside their own tribe—even to the profession at large—has kept them from learning how to communicate their ideas to a broader audience. It has been years, in fact, since the architectural community has fostered the kinds of voices that could speak on its behalf to a wider audience with any kind of moral authority, or constructively bridge the gap between practitioners and public. The profession has paid dearly for the absence of public intellectuals such as Lewis Mumford, Jane Jacobs, and the Goodman brothers, in the form of public perception of it as insular, arrogant, and worst of all, irrelevant.

In order to counter such perceptions architecture must open itself up to and even encourage independent press coverage of its activities. Obviously, architects alone cannot insure this type shift in approach by the me-

dia. But the profession in general, and firms in particular, can at least help by eschewing the exclusively marketing-orientation of their publication efforts. Architectural journalists in turn can start being more realistic in their coverage of the architectural profession. They can help make the processes and workings of the profession more transparent, acknowledging that the profession is a rapidly changing and strategically driven business, as well as the 19th-century gentlemen's profession that it still prefers to see itself as. They can run stories analyzing design, business and personnel moves by architectural firms and academic institutions at a level above the "who's doing what" and "promotions and announcements" sections that are the bread and butter of most trade magazines. And they can extend this realism to the broader context of the design and shaping of the environment, including the politics and economics of design and development.

The architectural profession for its part, must reinforce its commitment to maintaining a culture of inquiry and investigation by developing and supporting a more credible means for communicating architectural knowledge. It should begin by taking a new look at specialized peer-reviewed journals devoted to professional design and research. As the popularity of *Progressive Architecture's* annual awards program demonstrated, such publications do not have to be the dry, bloodless tomes that currently characterize the genre. But the profession, should at least consider such tried and true academic methods to purify the well poisoned by marketing culture. It must also recognize the truly creative value of criticism and its essential role in peer review. Architects can support this process not only by volunteering their own observations, but by soliciting opinions from artists, practitioners, developers and public intellectuals alike, and encourag-

ing vigorous discussion like the debate between Norman Mailer and Vincent Scully, and the lively (if somewhat contrived) critique of the "Whites" by the "Grays" published in *Architectural Forum* in the late 1960s and early 1970s.

Finally, just as the development of specialist journals serves to establish new communities of thinking, perhaps it is time for community building on a broader scale to include all those who work together in creating the built environment. The journals of other fields such as landscape architecture (*Landscape Architecture*), real estate development (*Urban Land*), and engineering (*ENR*) have sometimes taken a broader view of the built environment. But with rare exceptions such as *Places* and *Design Quarterly*, few interdisciplinary journals have reflected architects' concerns in a meaningful way. Such journals could create, if not common ground, at least a shared vocabulary and mutual understanding among the people who are involved in the creation of the built environment (not to mention a bigger market). This type of journalism would include articles on the construction industry spotlighting the work of different contractors and developments in the industry; articles on building products and the building materials industry following policy and manufacturing trends in key industries; analyses of different products and systems and architectural investigations into the design implications of different products; and investigative reports and profiles on developers and institutional clients.

But in order for architectural journalism to restructure itself along these lines, it must free itself from its traditional sponsors and establish itself on a basis that will enable it to operate independently. Is this possible? The editorial resources required may be too far-flung for such ventures to work on anything but a regional basis. To be

sure, recent history does offer some examples of enlightened patronage—Urban America's sponsorship of *Architectural Forum* in its later years, the Walker Art Center's ongoing support of *Design Quarterly*, and the CCAIA's continued sponsorship of *Architecture California*. But architects themselves have an obligation to support these publications.

Journals and magazines can make a difference: in encouraging a more reflective practice, providing a forum for a thoughtful and reasoned exchange of ideas and opinions, and in fostering a sense of community and common purpose. Professions get the institutions they deserve. Do we deserve more?

Eric C.Y. Fang, AIA, is an architect with Field Paoli Architects in San Francisco. He was co-editor of Harvard Architecture Review 9.

Letters

email

To: lhm1 (AC editor)

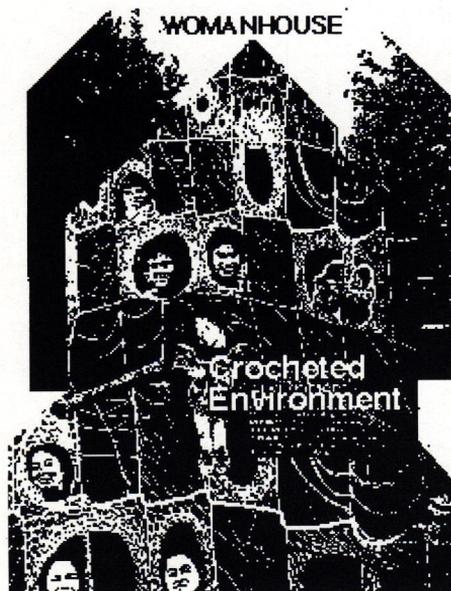
From: WomEnhouse

Visit <http://womEnhouse>

Imagine a space: In 1972 we imagined and created Womanhouse, the first female environmental artwork, which told stories of women's domestic lives and work. In this house, in a residential neighborhood in Los Angeles, women artists cracked open the door of the private house and invited the world to take a look.

Imagine a room. Virginia Woolf wrote, "one has only to go into any room in any street for the whole of that extremely complex force of femininity to fly in one's face" (*A Room of One's Own*).

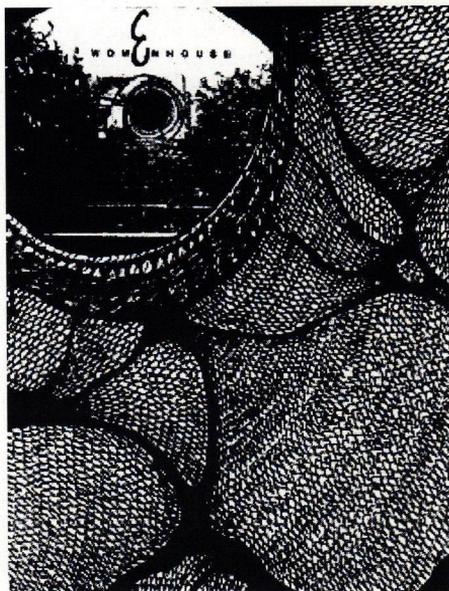
The walls of Faith Wilding's crocheted room in Womanhouse (1972)



Faith Wilding, *Crocheted Room*, Womanhouse (1972).

were completely permeable and the whole front was open so that you could be in the room, yet observe perfectly what was going on in the house.

Imagine a chamber. Lee Bontecous's dark opening (WomEnhouse 1996) leads to the antechamber; the chamber leading into and out of all the other chambers. It is a liminal space, a permeable zone (like a vagina) between inner and outer, between public and private, between the self and the world. It is the space in which we can choose to put on and cast off various wraps and roles and moods. It is the room of changes, possibilities, mutabilities, expectations. In the antechamber we pause for a moment to contemplate our coming in and our going forth.



Lee Bontecou, *Antechamber*, WomEnhouse (1996).

Dear Editor,

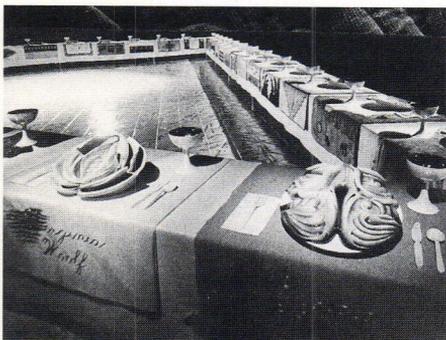
The most recent issue of *Architecture California*, requesting abstracts on the future of the architecture profession, caused me to address a concern about the general direction of the publications content. Assuming that the purpose of the periodical is to, in some small way, enhance the way I practice architecture, I offer the following recommendations:

Provide articles about innovations in structural engineering methods, not social engineering.

Provide articles about issues that affect majority architects (small practitioners) and a lot fewer articles about ethnic, gender, or sexual orientation minorities.

Don't include an abundance of articles about oppressed architects (of any ethnicity or orientation). I need to read about ideas or methods that have worked for other architects. I care very little about some crybaby, overwrought because they perceive most history as Eurocentric. *Architecture California* is not the proper media for such articles.

History without the politically correct barbs, art without the politically correct barbs, and technical innovation without the politically correct barbs should be encouraged.



Judy Chicago, *The Dinner Party* (1972). Reinstallation in *Sexual Politics* (1996), UCLA at the Armand Hammer Museum of Art and Cultural Center.

Finally, a periodical that I can show/give to my clients to help explain what I do, enlighten me about the direction of the profession, or at least give me the sense that someone on the editorial staff understands my needs, would be appreciated.

Michael R. Pratt AIA
Sierra Valley Chapter

Dear Editor,

I am an admirer of your magazine. Each copy of your precious edition is a subject of great interest to our colleagues and students in the studio and university. Any possibility to look at it is a professional event for us! I would like to have a subscription of it. In spite of the big changes in our country, our financial system is still very different from yours, and it is impossible for us here to pay for it. It will be a pleasure for us if in compensation we send you some Bulgarian souvenirs.

Once more in my name and the name of my colleagues and students we greet you and wish you good health and happiness, to have big success in your noble work in issuing your wonderful magazine, *Architecture California*.

In expecting we are your future clients and readers,

Professor Georgi Raitchinov,
colleagues and students
Sofia, Bulgaria

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