

The role of the architect in housing design: Old and new

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Invited Paper

From cultural elite to social advocate

"If the vital forces of our technological society circumvent the professional architect as now conceived, then our participation in the creation of an architecture for all will be negligible."

(Kenneth Frampton, "Reflections," AIA/ACSA Teacher's Seminar 1968, Montreal).

Based on the evidence of the last century, one must conclude that the architect cannot fill the role of both interpreter and trustee of the values of small elites and at the same time pretend to be a spokesperson for the so-called masses. The former requires the architect to represent society by proxy; the latter requires representation by direct engagement with the end user. Power elites tend to be able to enforce the formalization of their value systems in terms of access to political, social, economic, and cultural levers or power. By virtue of education or birth, or both, the elite architect quickly learns to understand and obey the language of establishment culture. This is not evil in itself. As long as society shares the values of its elite, the architect has no problems of "decoding" cultural messages and translating them into built form, and all without much dispute usually accepts his work. Once this link is broken, architecture becomes irrelevant in both realms. Elitist architecture merely awes and intimidates either by its size or by its exotic forms, while mass architecture repulses by its banality and shoddiness. The conflict between these two extremes breeds alienation at best, confrontation and destructive rage at worst.

The professed aim of architects to serve society as a whole, leads to a number of practical, moral, ethical, and conceptual difficulties. Traditionally, the architect had always served an elite or ruling class, transforming the ambience of each successive era into monumental edifices of unique presence, destined to join the pantheon of historical monuments as testimonials of man's transcendental craving for permanence and his search for eternal values. Seen in this context, the architect acted not only as a

builder and artist, but also effectively as a magician. Even in our own age, the appearance of the skyscraper as the transcendental symbol of the power of business and the mastery of engineering technique has a "magic" that cannot be denied by even the most cynical observer of the contemporary scene.

In his book, "When The Cathedrals Were White," Le Corbusier describes this magic: "Monday morning, when my ship stopped at quarantine, I saw a fantastic, almost mystic city rising up in the mist [New York]..." Later on, he goes on to describe the dark side of this magic: "...[b]ut then the ship moves forward and the apparition is transformed into an image of incredible brutality and savagery. Here is certainly the most prominent manifestation of the power of modern times. This brutality and this savagery do not displease me. This is how great enterprises begin: by strength." It is clear that in this quote Le Corbusier admits that what he is admiring here are the symbols of those who control that strength, built by architects who are given power by proxy by the new commercial empire builders to transform the urban skyline without the consent of the humble multitudes who supply the sinews of that strength. Of course, we know that Le Corbusier did not completely forget the latter either, by evolving for their use and benefit the concept of his "machine for living" as a way to provide housing for the mass man, his "man of the future." Much has been written on this subject—for and against—and need not be repeated here again. However, the basic dilemma remains: **how does one design for the mass-man or the anonymous client, who refuse to be considered anonymous, a number, or a faceless entry in a statistical survey?**

To design for a single client with explicit cultural tastes and a clearly delineated building program—particularly if the architect comes from a similar cultural background, or if he has been inoculated with the "proper" cultural and ethical views in the academy—is possible to achieve professionally, given adequate talent and competent professional training.

Tradition and training have left the architect singularly unprepared to deal with problems of designing for contemporary mass society. Historically, social awareness in architecture is a relatively recent phenomenon with its roots in the fertile soil of the French Revolution and its first formal articulation in the works of the pioneers of the Modern Movement. While much can be said concerning the stylistic misconceptions of the Modern Movement and its blind trust in the power of modern technology to solve the housing problem, the underlying belief, that architecture must henceforth place itself fully in the services of society as a whole, has become the universal credo of every "progressive" architect of our time.

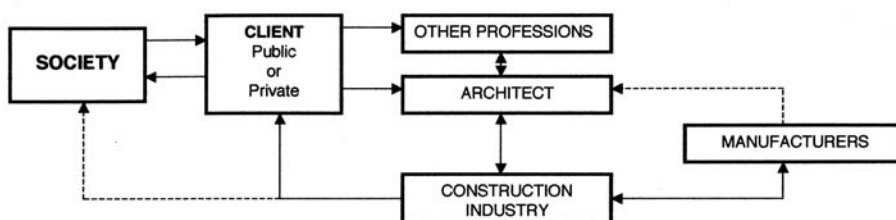


Figure 1: Traditional role of architect

The problem of representing the ordinary citizen in a mass society in design practice is infinitely more difficult, and becomes even more intractable if that society consists of a large number of sub-groups of different social, economic, and cultural backgrounds (e.g., the USA), is vast in terms of total numbers, and is constantly subjected to change, brought about by perennial cycles of rapid technical and social change (the world). Moreover, past reliance on formal rule systems, on traditional ways of doing things, and on personal intuition, has given way to reliance on technology and science, including psychology and sociology as "humanizing" inputs.

Once the view is taken that design solutions can be generated on the basis of "scientifically" derived user requirements, these tend to become codified as basic minimum standards, rather than being used as a point of departure for subsequent revision and improvement, especially since so called basic user needs are subject to constant change not only in time, but are also to the vacillating influences of different environmental and human factors. Apart from the short-term influence of fashion and taste, other long-range agents of change must be factored in as well, such as generational value differences, changing family composition, the effects of social and cultural change, and—most of all—the recognition of the unique physiological and psychological make-up of each individual human being. All these factors have surprising and unexpected effects on how the built environment is perceived both collectively and individually by its users. Based on such evidence, the professed aim of the socially committed architect to solve a given building tasks seem difficult, if not impossible within the parameters of current conventional practice. The very fact that user needs change, and

that even socially accepted needs vary in terms of individual perception and satisfaction, means that human problems can never be solved by this or that generic design, but can only be approached as an ongoing process, and very tentatively at that.

The general approach to design, as outlined above, will be labeled "normative" in that it defines the user as "average" in the statistical sense, without recognizing individual deviations from established norms. The transformation of conventional design practice into a market driven model is charted below:

As a reaction against such a leveling of user requirements by rigid norms, concerned architects and user advocates have suggested a number of alternatives, intended to include user input into the design process. This may be broadly described as "participatory" design and will be dealt with in more detail in the following.

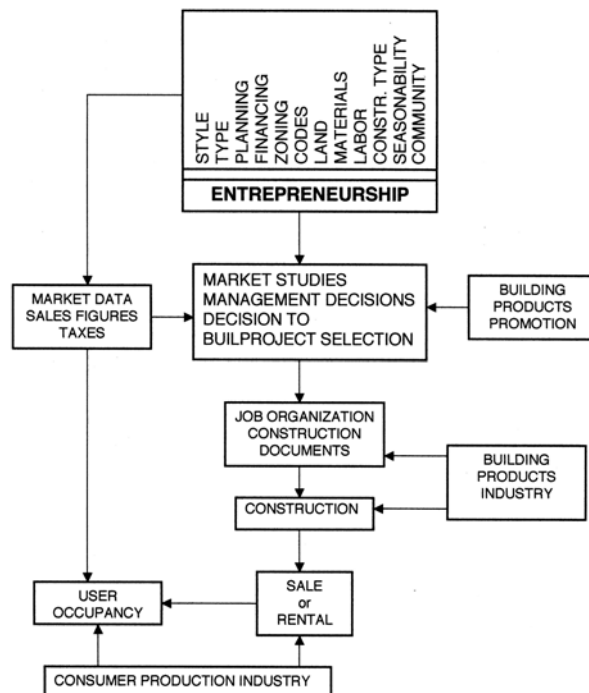


Figure 2: Model of conventional development process – Free market sector

The collective client and design practice

As outlined above, conventional architectural practice is primarily concerned with objects, rather than processes by which objects are produced. This object fixation is the result of a number of factors, the most important being:

- The architect's education, which concentrates almost exclusively on the formal aspects of design (i.e., paper architecture)
- Traditional images of the house as cottage, palace, manor, etc.
- Alternatively, idiosyncratic “avant-garde” designs for out-of-the-ordinary “signature” solutions.
- Professional elitism and reluctance on the part of the architect to participate in truly significant team efforts.
- No financial incentives (fees) for the architect to participate in multi-disciplinary design exercises with lengthy user input protocols.

Another way to look at the problem is by way of analogy. Industrial production in the consumer market provides us with a good example of professional adaptation to change. Prior to the industrial revolution, manufacturing activities were usually controlled and financed by single individuals and their families. Skilled individuals controlling the entire process, rather than merely one of its phases, as in modern industrial production, based production on craft methods transmitted from one generation to the next and more often than not controlled. Markets were local and clearly defined by custom and tradition. Contact was face to face and business was conducted on the basis of personal trust and direct face-to-face negotiations.

Machine production changed all that. The making of a use object ceased to be a craft based activity. The machine operator superseded the craftsman. Discrete operations became specialized and the production process had to be pre-coordinated in all its phases, i.e., managed. The direct relationship between production and quality control

by the craftsman ceased to exist and is now replaced by an indirect relationship, i.e., the production control of each stage in the process by a separate class of technicians. Industrially based specialization is not only required to control the production process itself, but has been extended to marketing, administration, and the management of management as well (recently emerging as a separate discipline called Operations Research). This new relationship is defined by Operation Research by means of the so-called “Black Box” model, where design requirements are seen as an “input” into a black box), which “translates” the input by internally coordinating the necessary production relationships and supplies the user with the specified “output,” i.e., consumer products.

The rationalization and industrialization of the building industry has so far not been as radical and thorough as that of other consumer industries, but has reached a point where even conventional building types are assembled to a large extent by means of industrialized techniques and with industrial

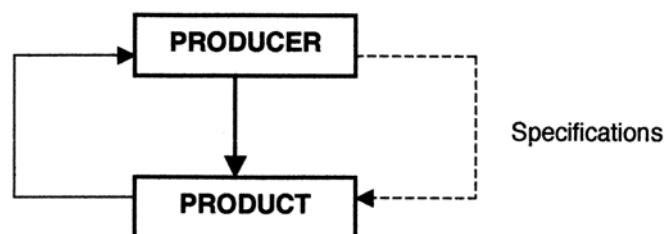


Figure 3: Direct product – user relation (craft process)

components. For lack of a real understanding of the processes and methods involved in this transformation of the building sector from craft-oriented to industry-oriented, the architect has been more or less relegated to the role of overall space planner and facade decorator, without significantly controlling industrial product development or being able to stimulate changes in the production processes as such (e.g., in the prefabrication sector).

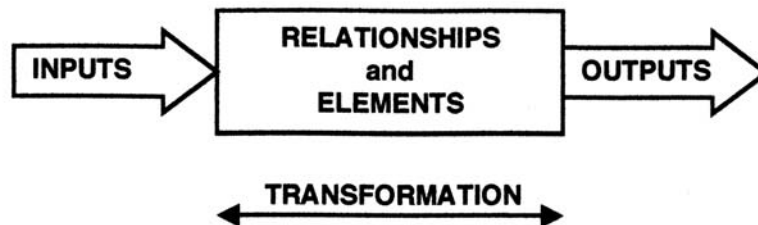


Figure 4: System in “Black Box” format

Neither does the architect manage the assembly process on the site to any significant extent any more, a function now performed by the project manager or the contractor. The architect's only management function left is that of running his office, and by extension, that of producing “design.”

Based on the efficiency of this model, critics from both the inside as well as the outside of the profession have suggested that the architect should change the mode of his operation adapt his practice to its contingencies. However, given the diversity and scale of the building tasks to be “managed” by the architect (scatter sites, urban vs. suburban projects, climate, topology, etc., this model cannot be considered as the best means for transforming the profession, for the following reasons:

- There is no need to assume that only one interpretation of the profession is desirable or possible.
- A number of architects have already become “managers” on the model of industry, but tend to pretend that they are something else, for fear of being criticized by their peers.
- The question of what is to be managed must be answered first.-
The management of the design process itself must be clarified and made explicit in terms of its justification as a socially beneficial product. This implies the active participation of the user as the occupant of a building, in contrast to his role as a consumer of more or less perishable mass-produced consumer items. Moreover, the current organizational model is linear, with many “black boxes” of a series of single ideas for a parallel series of unique objects emanating from the “in” box, only to be modified or rejected by the “out” box. In other words, rather than controlling the relationships within the black box, the architect is obliged to start from scratch over and over again, until the desired solution is finally approved. In a consensus situation this creates no great problems (i.e., when client, architect and user agree on all aspects of cultural, social and material relationships, but becomes a tedious process in an environment of great social and technical change.

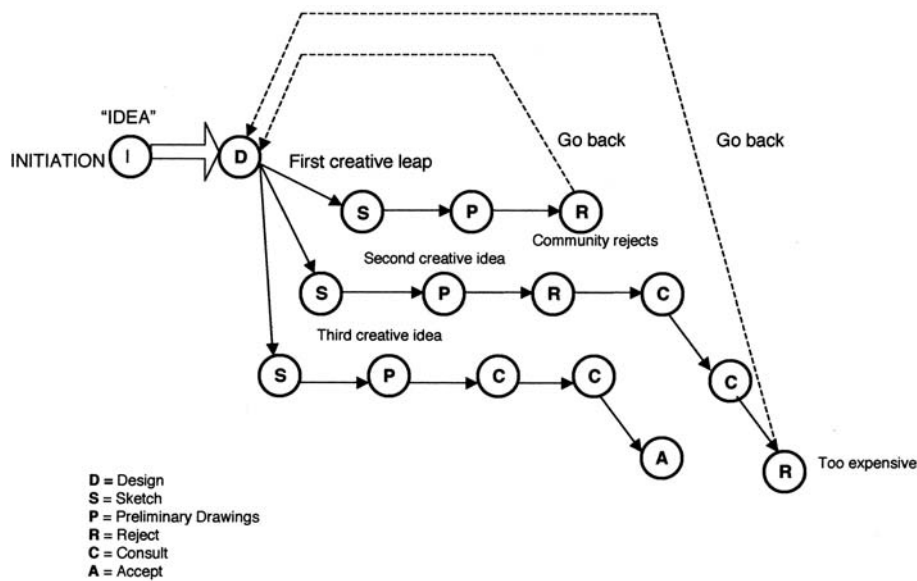


Figure 5: Conventional linear iterative design process

The figures below show the intensity and level of control the architect exerts on the overall building process in conventional practice. As depicted below, his intensity of involvement in the categories of use and demolition is almost nonexistent and means that essentially no feedback from these phases is obtained directly. The only feedback comes from journals, statistics, briefs, reports, etc. but seldom from the projects executed by the practice.

Phase	Very High	High	Medium	Med. Low	Low	Almost None	None
Preliminary	←○→						
Design	○						
Construction Documents	○→						
Use			○→				
Demolition						○→	
New Site Use						←○	

Figure 6: Intensity of involvement of architect in the various building phases

Despite the fact that the above tables are only a rough approximation of reality, they nevertheless indicate the limited nature of the architect's real area of control in the overall design procurement and assembly processes. It should also be noted that even during the design phase and the subsequent construction phase, part of this control is delegated to consultants. Another area of control is rendered illusory by virtue of constraints due to restrictions imposed by mandatory laws and regulations and the scope of commercially available product lines.

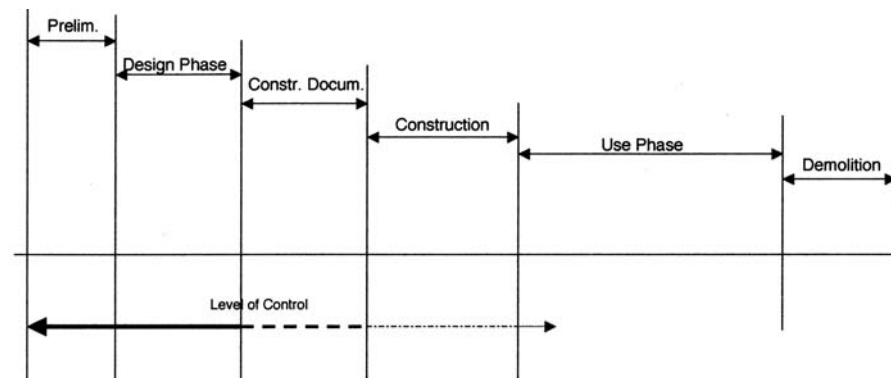


Figure 7: Level of control by architect in conventional practice

A number of possible remedies have been tried to make the process more efficient. Some of the more radical ones are listed below:

- Elimination of architect (partial or full) during the design and construction document phase: Initial cost outlays is significantly reduced in large and expensive projects. Industrialization and standardization tend to accomplish this by reducing the need to design each project "from scratch," and by using standardized details, stored in computerized project files, or extracted from shared computer data banks. This is called the DESIGN-BUILD PROCESS.
Since each phase requires the completion of the previous one in conventional practice, employing more manpower, usually on a short-term basis, can only purchase timesavings during the design phase. This leads to inefficiencies due to the fragmentation of responsibilities and overlap of functions.
- More overtime: This leads to inefficiencies due to fatigue and loss of interest on the part of the staff, as well as increased cost of labor.
- Quality reduction. This leads to inefficiencies due to mistakes to be corrected at a later phase (construction documents), delays during construction, and increased maintenance and operation costs during the use period.
- Elimination of design alternatives. This leads to the application of inappropriate solutions to the problem at hand, or so-called "cosmetic" fixes (fancy facade treatment with poor planning inside), or the abdication of design responsibility to owner or builder ("let them do what they like"), or both.

Each of the above "remedies" obviously requires a certain amount of "trade-offs." The diagram below offers a schematic illustration of the most common trade-off between cost, square area and quality. According to Ezra Ehrenkrantz, the only way to break out of this triangle of constraints is to change the context. For example, substituting low quality on-site labor by off-site prefabrication of quality-controlled components may modify the relationship between quality and cost.

For example, and given a fixed context (the triangle), cost reduction can only be achieved by reducing either quality or area (m^2). Conversely, increase in floor area will impact both cost and/or area. The only way to break out from the fixed parameters of the triangle is to change the outside context, such as replacing on site construction by standardized industrial systems, or by subsidizing area increase, etc.

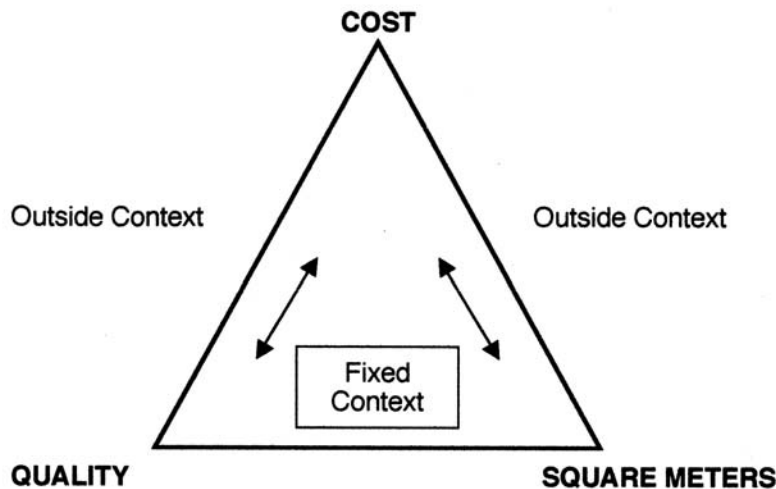


Figure 8: Relationship between cost, area and quality

In terms of fees generated, only the design and construction document phases are profitable to the architect. Even if the architect wishes to evaluate and/or research the use phase, there is no financial incentive for him to do so.

In the absence of adequate compensation for monitoring feedback from the actual users of an architect's project, he or she is forced to use the only other readily available design information source—the professional journal. Most professional journals are financed by subscription and advertising revenues and thus must be considered as partial to their views, rather than the views of the actual users. The advertisers in turn are obviously most interested in addressing their messages to the market of those who make design decision, i.e., architects and their patrons. The vicious circle is complete. User needs are only recognized vicariously, i.e., by articles (and plans) authored by architects and/or critics who are also architects.

A list of design inputs, common in conventional practice, may look somewhat like this (in approximate order of importance):

- "Creativity" and "intuition" of the design principal or staff.
- Experience, i.e., "how many years" or "how many projects" the office has produced over time. However, many societal problems are not amenable to precedent in the sense of conventional architectural models.
- Program submitted by the corporate or investor client, often demanding a particular solution in terms of layout or style.
- Professional journals and books.
- In house "research," usually limited to survey of professional journals and books, or in-house databases and files. Rarely extending to active interaction with users.

Apart from direct consultations with individual client-users, academic research, government standards, and/or public user surveys are used to provide the architect with a set of generic user requirements. Even in the case of officially supported "advocacy planning," the resulting recommendations by various politically biased interest groups still have to

compete with “fashionable” design images publicized by trade journals and Sunday supplements of daily newspapers.

Another negative aspect of the influence of professional journals as a prime information source for design is the general propinquity of the editors to favor unique or formally interesting projects for publication. As a result, most of the material printed concentrates almost exclusively on visual and stylistic aspects of the published examples. Problematic program issues are rarely discussed. Since design for the “ordinary” collective user is generally accomplished by means of accepted generic solutions, architectural journals have little interest in publishing such efforts, which—in effect—are inimical to their policy of presenting each project as another architectural “first” or as a “unique” solution to a single edition building or project. It should be noted in this context that the notion of “prototype” is superficially similar to the notions of “unique” and “first,” but the similarity stops, when only the first unique version of a “prototype” is published, without following up, either in its evaluation in use, or its development over time.

Earlier, the indirect relationship between the architect and the product manufacturer via the selection of standard items from a catalog has been mentioned. This indirect relationship is reflected in the organizational hierarchy of the conventional building process as shown in the figure below.

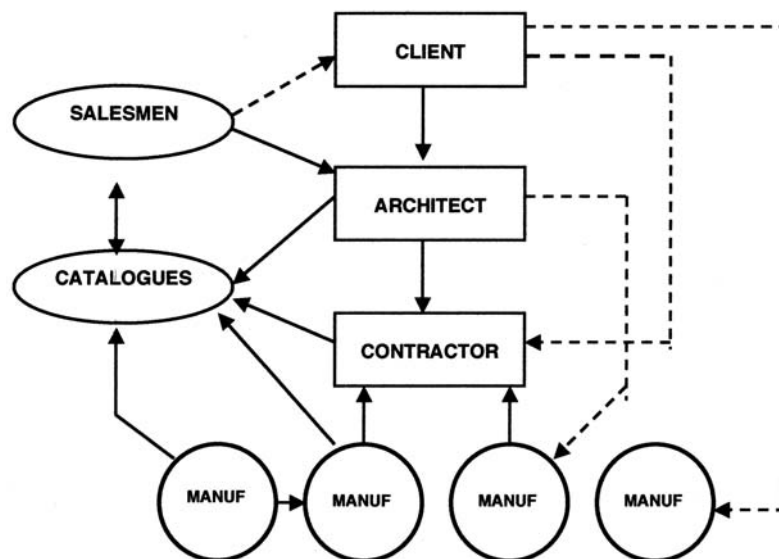


Figure 9: Indirect relationship between architect and manufacturers

Recognizing the need for a more responsive mode of confronting increasing demands of user input in design, the American Institute of Architects has published a pamphlet with the title "Emerging Techniques of Architectural Practice." In it, number of suggestions is made to “introduce modern management techniques to architectural practice and project management.” The design process as such, however, is left essentially unchanged, with the exception of urging architects to avail themselves of the latest computer technology and the application of modern management techniques to conventional office practice. The linear nature of the design process is left unchanged, except for a change of labels, e.g.:

OLD:

Commission
Program
Preliminary. Design
Preliminary. Sketch
Contract

NEW:

Problem Definition
Goal setting
System analysis
System synthesis
System implementation

Operations Research and Communication Theory are an example of a similar attempt to pour old wine into new bottles. The comparison below will serve to illustrate this

OLD:

Client
Architect
Architecture

NEW:

Transmitter
Channel
Receiver

However, the recognition of the need to include active user input into the design process requires more than just a change of labels. In fact, what is needed is a radical rethinking of the way architects will have to incorporate social and technological change into their practice as "social advocates" for the ordinary citizen, rather than clinging to their status as master builders for the privileged client.

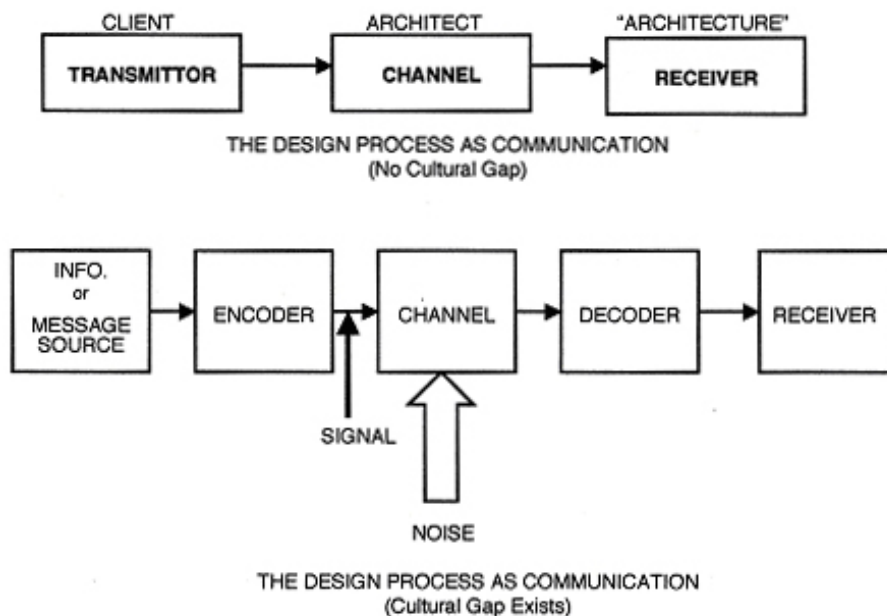


Figure 10: The design process as communication

Design process as communication

Using the analogy of Information Theory, direct client - architect communication between parties of similar cultural value systems requires no elaborate "coding." Transmission in such a system is characterized by little or no distortion. Redundancy is high, hence little surprise. The communicated message is tangible, and problems encountered in the study of the communication systems are somewhat familiar to those encountered by system engineering and operation analysis. However, when the flow in the network becomes distorted over a widely distributed and fragmented network, the criterion of efficiency becomes one of accomplishing the

transmission of messages with minimum distortion at maximum speed and minimum cost.

This may be compared to Design Process as Communication. Even though the above analogy is somewhat crude, the main point is made, i.e., the moment the designer loses cultural (or social) contact with the mass-client, there arises the need to both "encode" and "decode" the information in order to transmit a given message in a "readable" manner to multiple "receivers."

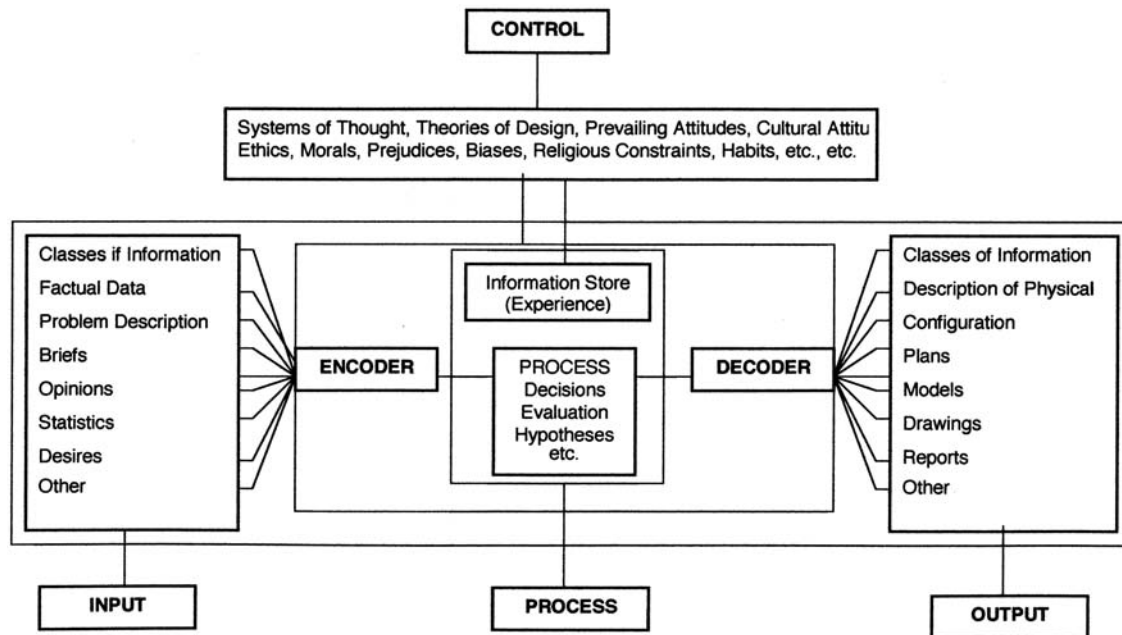


Figure 11: Communication process in design

Not being familiar with the code, the receiver (user) will interpret unfamiliar signals as "noise." In this case the architect, acting as "decoder" of the "noisy" message may either give up and refuse to accept the message, or pretend that he understands and substitute his own version of what he thought the original message was meant to mean. To a large extent, much of public sector "project" architecture (e.g., mass-housing), built in the last half century, is characterized by this distortion in communication between architect and end users. Unfortunately, the answer to the difficulties of cultural "translation" is not being sought by trying to investigate the comprehensibility of "codes," but by an endless preoccupation with searching for more elaborate "channel" hardware. Much of the conceptual paraphernalia of this effort has been borrowed from the military (Control Engineering), Operations Research, Space Technology, Systems Design), and management science (Cost/Benefit, Organization Theory, etc.). "Social Engineering" was mobilized to take care of "encoding" human and social factors by means of behavioral techniques of analysis and control. Statistics represent the most popular means of transmitting "code" and are used to convince the "receiver" that he or she must accommodate behavior to its output, regardless of level of comprehension.

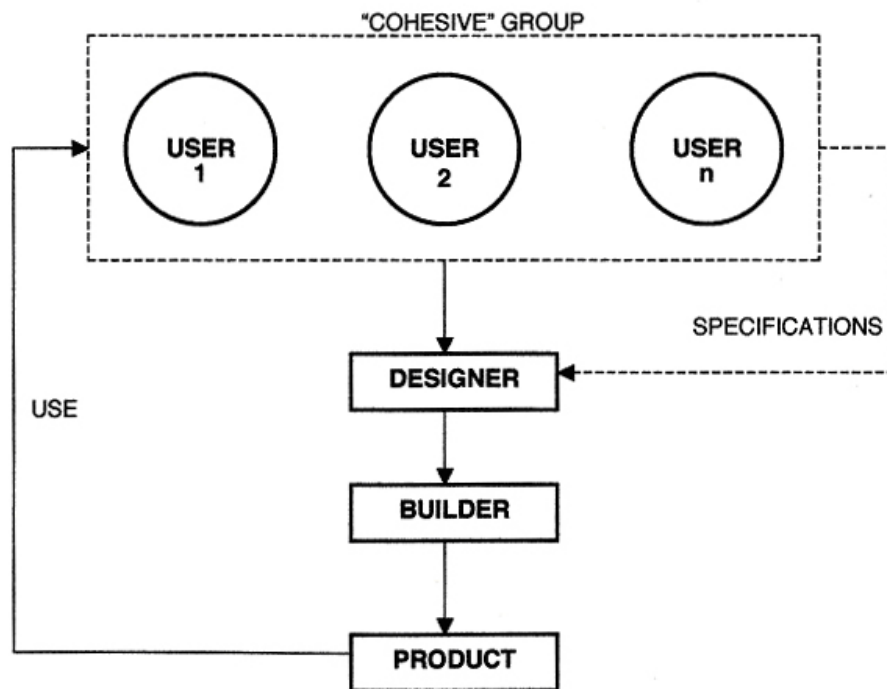


Figure 12: Shared value design product

All these techniques have one thing in common: They are labeled by their proponents as neutral and/or non-ideological. They are supposed to represent "...a set of methods of experimentation and practice with which one can achieve specific empirical results." Most of the techniques and methodologies, mentioned above, are borrowed from management science, operations research and system engineering, applied to the field of human relations. Since engineering and—to a large extent—science deal with phenomena as objects (objectively), such a transfer places human relations on the same level as that of inanimate objects and tends to treat the individual as just another experimental laboratory specimen. It is by such means that the problem of alienation between user and architect is compounded. The application of mechanized production methods in the creation of human habitats completes the objectification of individual human needs and reduces human behavior to resemble that of an intelligent (predictable?) machine.

Having lost direct communication with the client as an individual, and being insecure in reading and decoding the diverse cultural signals emanating from the cacophony of a pluralistic society, the architect—trying to be ethical and concerned—is afraid to deviate from conventional practice and his choice in terms of human value judgments is abdicated in favor of "scientific" value judgments or a quasi-objective response to statistically derived norms and standards. This does not mean that statistics and certain norms and standards are useless. It only means that their use as the sole input into design decisions is essentially a gross abuse of their efficacy in technical terms. Apart from questioning the propriety of applying the techniques of System Engineering and Operations Research to the design of human environments, even scientists are now beginning to agree that there is no such thing as "value-free" science.

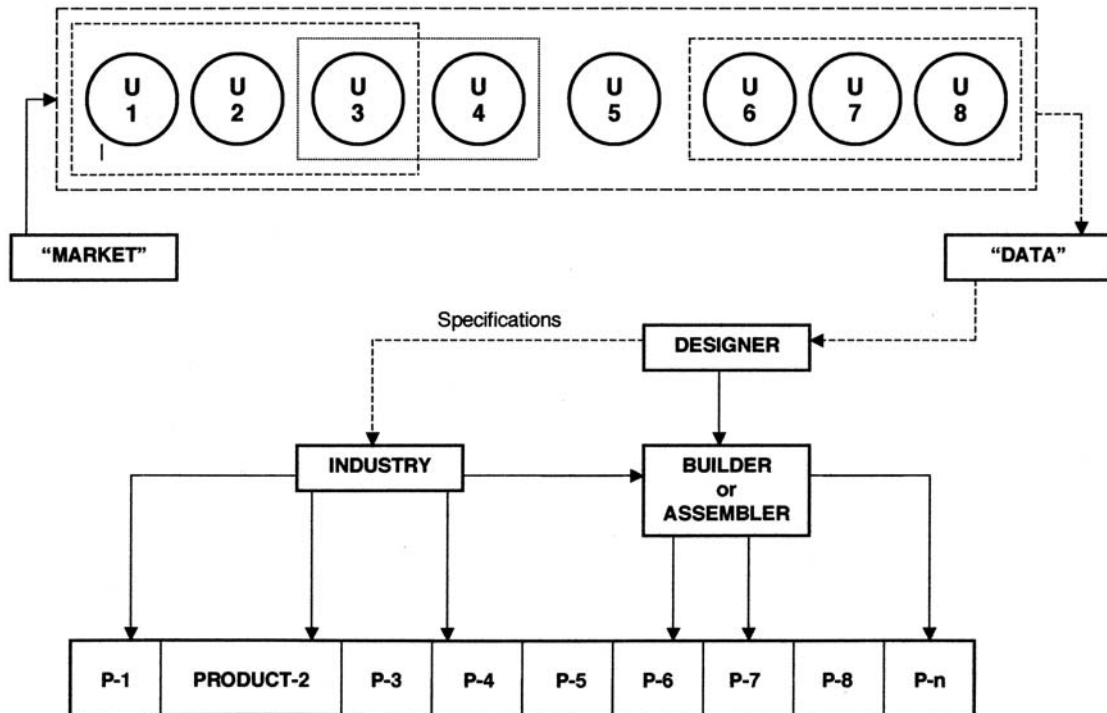


Figure 13: Design for group of different users

Accepting the fact that science is not neutral, but based on a specific set of its own internally generated value judgments, the architect needs to:

- Become aware of the kind of value system informing his design decisions.
- Take full responsibility for decisions affecting human values (apart from technical decision, which are subject to law) as to their social and individual consequences as affected by the built environment.
- Cease to treat the collective client as an object by denying him or her the inalienable right to express his or her identity within the area of his or her individual control within the context of the built environment (including active input into design).
- Respect Norbert Wiener's law of robotics, i.e., "no robot shall obey any order from its human master which would harm any other human being."

The following paragraphs are a tentative attempt to outline the basic elements of such a new approach to design, list the methodologies relevant to the problem, and provide a guide for their application.

Challenge: Eliminate design by proxy

On the face of it, there seems to be no way out of the designer's dilemma. He is well trained to design for a known single client or a specific corporate client, but less so when confronted by the need to design for an anonymous mass-client, who is more often than not treated in the abstract, as an "object." In both cases, the designer must make decisions on behalf of the client, based on certain explicit or implicit value judgments. In the case of a known user, the architect's value judgments are expected to coincide with those of the individual or corporate client, while value judgments made on

behalf of an anonymous user lead to the problem of design by proxy. Design by proxy can therefore be characterized as follows:

1. Converting assumed user needs into "generic" solutions. This leads to a number of difficulties, chief among them the fact that the user is still treated as an abstraction and locked out of any meaningful design input.
2. Provide the user with an effective way to make a meaningful input into the design process.

The following pages are an attempt to outline an effective approach to facilitate user input in the design process, by including the architect in the process as both EXPERT and ADVOCATE.

New professional approaches to mass housing advocacy models

Community advocates have emerged from two sources:

1. Volunteers, who choose to identify personally with certain user groups and who join them as (unpaid) consultants. These individuals usually advise the community on how to organize in order to gain access to bank credit, deal with bureaucratic obstacles to design making on housing delivery, and obtain available subsidies in a lawful, coordinated process of political empowerment.
2. Professionals, who represents the interests of communal organizations or interest groups as part of official local decision-making bodies. These may be either "embedded" within the various municipal planning and urban development agencies, or act as "outside" advocates, usually from an academic or think tank base.

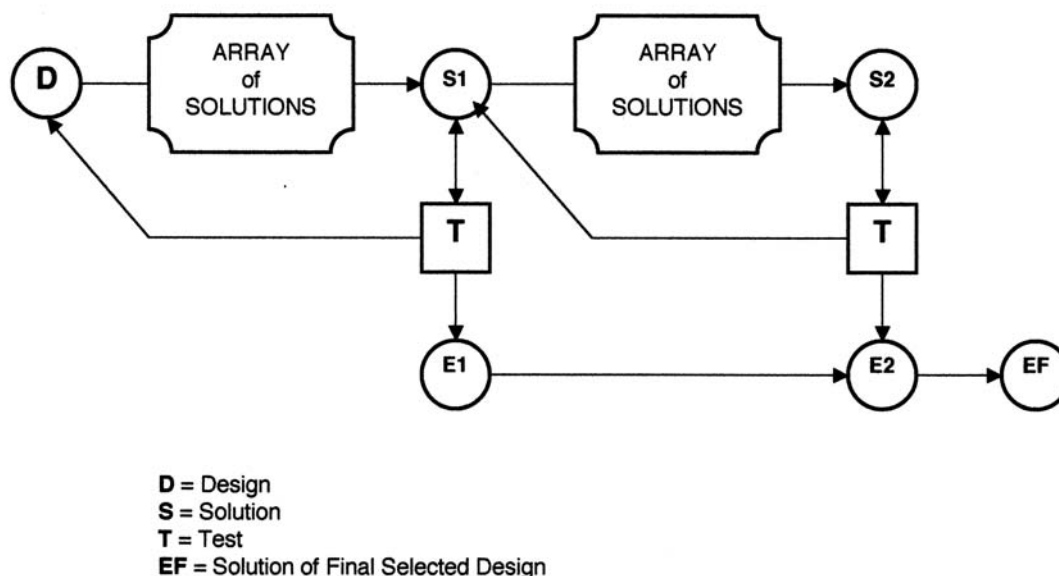


Figure 14: Feedback loop for alternative design solutions

While important, the role of the volunteer will not be considered here, mainly because it is difficult to formalize and also because it implies personal trajectories of action, dependent on each volunteers commitment of time, expertise and financial commitment. Professional commitment to advocacy is not only easier to formalize, but also more important due to its overall impact on both size and cost of public housing policy.

The basic assumption underlying a more user friendly attitude of the profession vis-à-vis mass housing is that past “single edition” solutions have largely failed to satisfy the “anonymous” user, apart from generating widespread social unrest and collateral waste of resources (riots, demolition, abandonment). In other words, design practice has been forced by these events to shift from a “linear,” single solution model to the elaboration of an “array” of alternative solutions to be presented to the “mass” client for evaluation and decision. This requires the incorporation of an effective “feedback” loop into the design process, along with the establishment of equally effective mechanisms to facilitate the research and financing of the information fed back to the planners and architects involved in the design of mass housing projects.

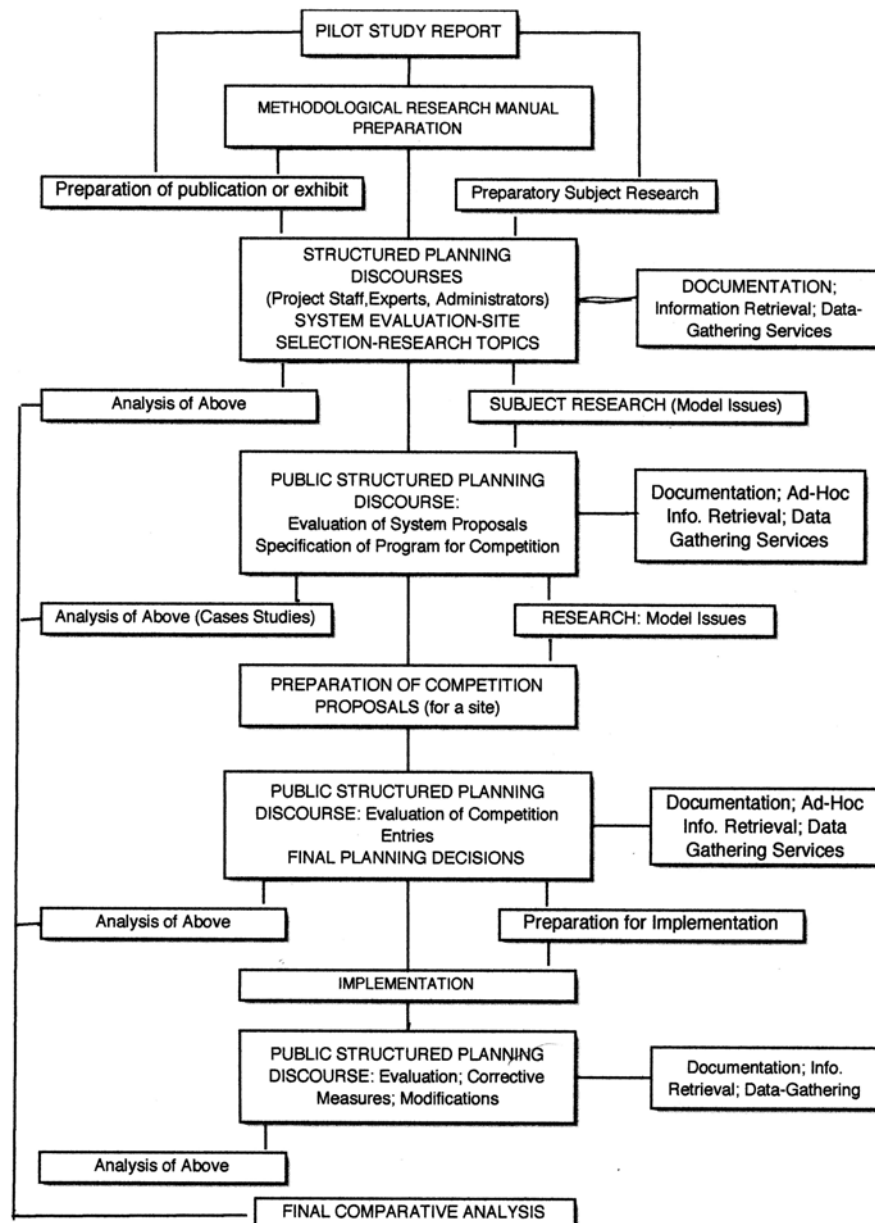


Figure 15: Information based feedback protocol
(After Thor Mann, U.C. Berkley)

An example of a possible protocol for managing feedback information as an input into the planning/design process is presented above.

Depending on size of project, feedback information may be managed either by a single professional entity, or by a group of professionals, usually under the guidance of a community-based planning team. The figure below shows the possible organizational make-up of such a team.

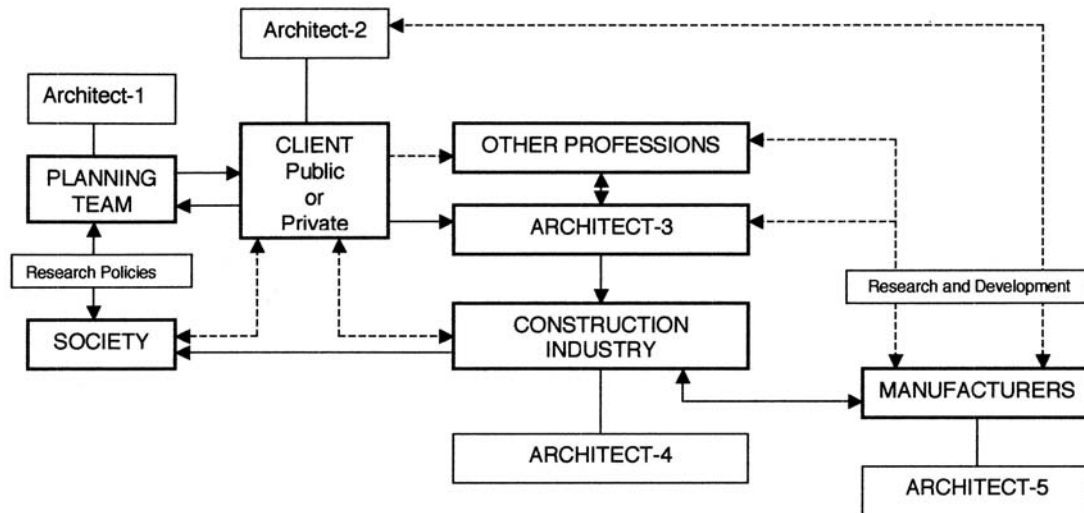


Figure 16: New roles

Design: Product or process?

The primary determinant of design for mass housing is cost. The chart below illustrates the fact that a “finished” house is usually way beyond the financial means of low income groups. Therefore, public or private efforts to supply fully finished housing have to be either subsidized out of the public purse, or left to self help (creating slums, favelas, bidon-villes, etc., all defined as so-called “informal” settlements). The graph below illustrates the relationship of affordable finished floor space to cost in Mexico. Notice that Level 1 (representing the poorest), falls entirely off the chart, while Level 2 (poor employed) can hardly afford 5 m² of housing area.

The cartoon below illustrates the way in which the less affluent experience housing as a work in progress, rather than the creation of a complete object. It also illuminates the need for “staging,” i.e., adjusting each stage to the resources available to the dweller at different times of their life cycle. In other words, the design of such housing needs to concentrate on PROCESS, rather than PRODUCT.

Technically, the process of “staging” can be divided roughly into what John Habraken calls “support” and “infill.” He defines “Support” as the permanent (mostly structural and mechanical) elements of the house, while “Infill” refers to the more or less changeable elements of the house (in time and space). Depending on type of dwelling, the line between support changes with each particular project, depending on resources, cost, life style, life cycle, etc. For example façade elements may be either designed as permanent in small, conventionally built edifices, or considered as flexible in large, prefabricated-projects.

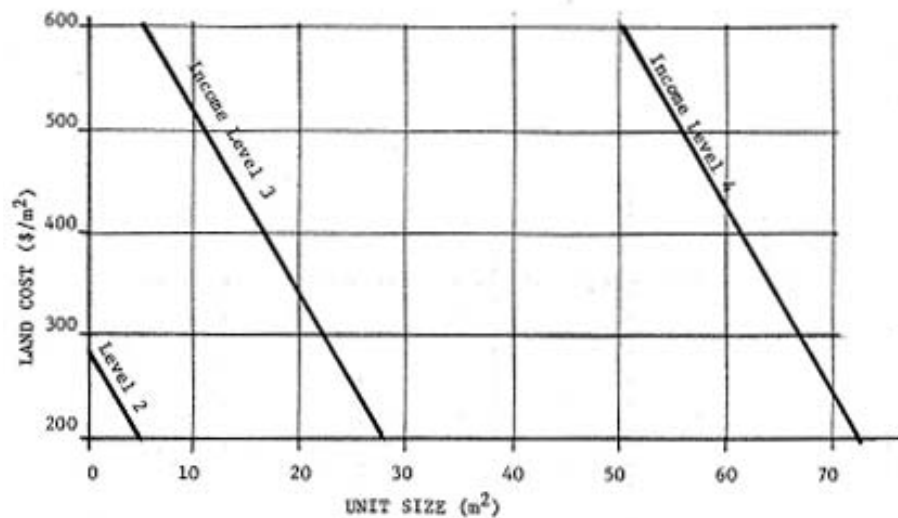
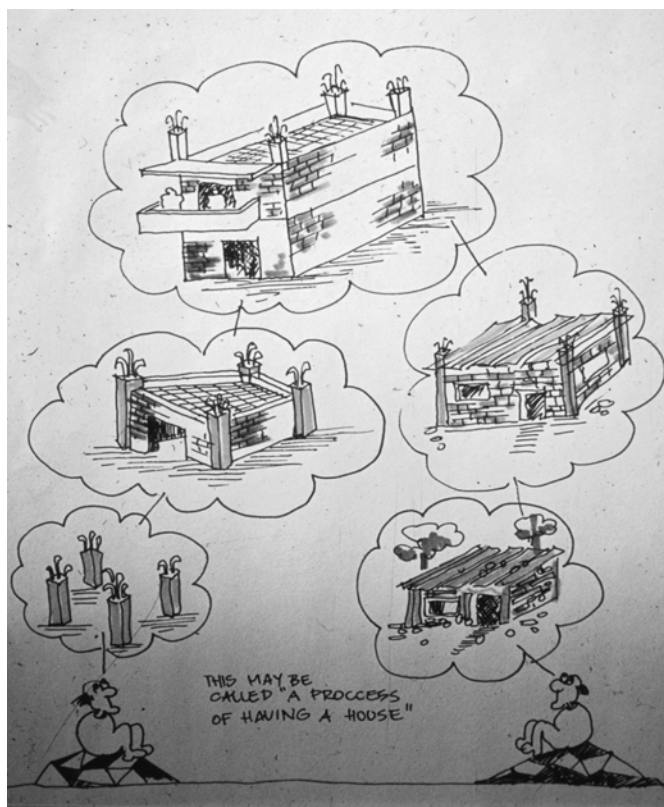


Figure 17: Relationship of cost to m^2 of finished housing



A poor man's "dream house."

Figure 18: Graph showing affordability for low to high income groups (Drawing by Oruc Cakmakli)

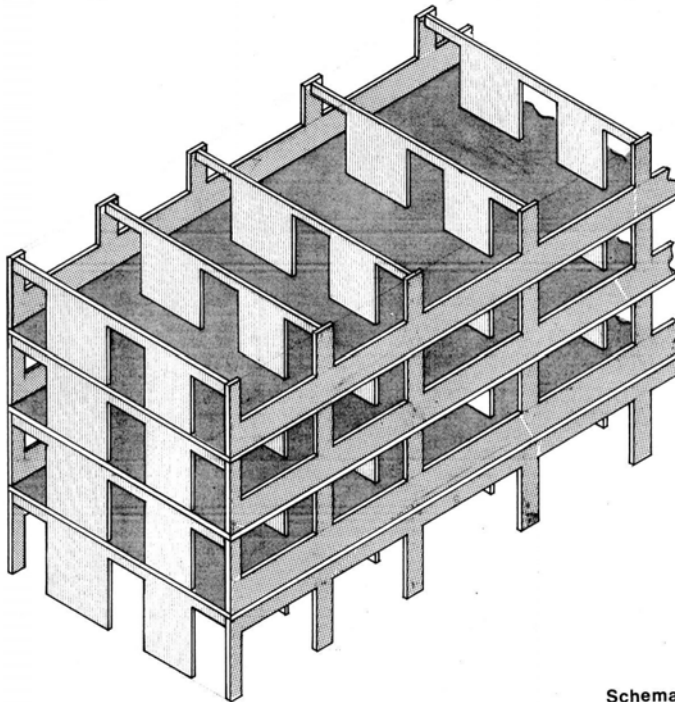
A schematic sketch of a possible "Support" as the first stage in a public housing project in Mexico is shown below.

Completion can be "staged," depending on the above named factors. For example, façade elements, party walls and kitchen and bathroom cores can be subsidized by the public purse in the second stage, while interior partitions, appliances and finishes are left to be supplied by the user. Design thus becomes a tool to anticipate all the possible (and feasible) plan options to be realized in time and space, without initially "freezing" the solution. This is similar to the design-build process for commercial buildings, but requires more sophisticated feedback mechanisms than—say—in anticipating changeable office building layouts.

It is beyond the scope of this essay to enumerate the many different approaches taken over the past decade in dealing with the process of "staging" the planning and design for housing. The reader is referred to the writings of Turner, Habraken and the case studies, published in the Dutch journal "Open House."

Support Type: 4-5 Floors

Basic Support Structure



Schematic Isonometric

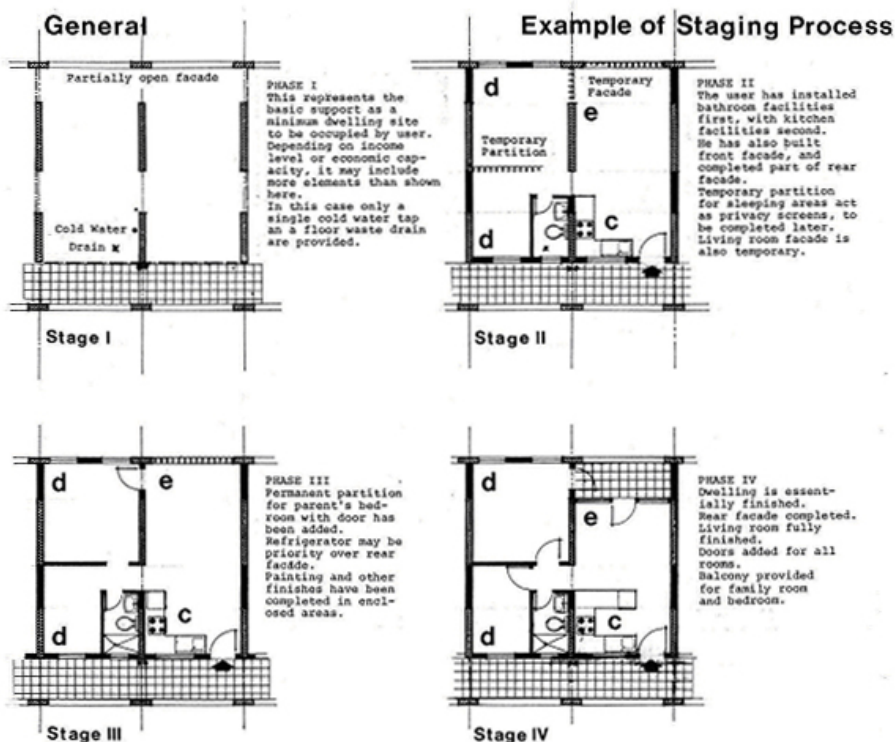


Figure 19: Public housing project in Mexico

Conclusion

In order to keep pace with the technical, social and political changes affecting mass housing, the architect has to adjust his or her practice both in terms of the management of professional practice and the way in which

housing is designed and delivered. The main components of such a transformation of conventional ways of practicing are:

1. Direct feedback from affected users or user groups, rather than reliance on anonymous statistics and formal precedent.
2. Team work and inclusion of relevant professionals in architectural practice, either in-house, or as consultants.
3. Cooperation and involvement in technical developments, relevant to the above described “staging” process (i.e., enter the “black box”).
4. Understanding design for mass housing as a process driven activity, rather than the product of “linear” single edition production (this implies a different fee structure, covering the involvement of architects in the whole spectrum from design to demolition).

Most of all, it implies a different educational model for training the next generation of architects, with more emphasis on general process than the exclusive concentration on unique product .