THE DEVELOPMENT OF CONDOMINIUM HOUSING:

CONSTRAINTS ON ARCHITECTURAL DESIGN

By

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THE DEVELOPMENT OF CONDOMINIUM HOUSING: CONSTRAINTS ON ARCHITECTURAL DESIGN

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The "programming" of condominium housing, as it relates to the role of the architectural designer, influenced by both the architectural design process and the speculative housing development process, is the focus of this study. The study attempts to identify the difficult considerations a development group will have to make when planning a new residential housing development. It will examine the roles of these actors and the roles of other people whose decisions also impact on the development project. Finally, and most importantly, the study will examine the role of the architect as a participant in the development process: how he or she strives to consider user needs while at the same time operating under constraints imposed upon him by other aspects of the development process. Specific decision-making factors which impact on the development process and directly affect the architect's role will also be discussed.

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INTRODUCTION

THE PRODUCT, THE PROCESS, AND THE PARTICIPANTS

The "programming" of residential space as it relates to the role of the architectural designer, influenced by both the architectural design process and factors outside of design considerations (such as economies of supply and demand), will be the focus of this study. Programming, in architectural terms, is a effort to insure that the environment of the residence and the needs of the prospective user are in balance. This study will attempt to identify the different considerations a development group will have to make when planning a new residential condominium housing development. It will examine the roles of these actors and the roles of other people whose decisions also impact on the development project. Finally, and most importantly, the study will examine the role of the architect as a participant in the development process: how he or she strives to consider user-needs while at the same time operating under constraints imposed upon him by other aspects of the development project. Suggestions will be made on how the architect's role might be expanded within the development process in order that his function as programmer of user-needs might be enhanced.

Design of Study

As indicated in the preliminary discussion, the objective of this study will be to begin to illuminate specific

reasons why the architect involved in a condominium development project is hindered by the very processes of the project. It will be necessary, in tracing the causes of this circumstance, to outline some of the roles of important actors in the development process and to discuss specific decision-making factors which impact on the development process and directly affect the architect's role.

Chapter I will begin to lay a conceptual framework for understanding user-needs that ought to be anticipated by the architect or the developer in the programming stages of the housing development. The concept of space, as opposed to the physical use of it, is an important consideration and is fundamental to the architect's desire to create physical living space which harmoniously responds to the needs of prospective residents in a supportive way. How this consideration is either acknowledged or ignored during the development process is a significant question that this study is proposing to examine.

Since the study will deal principally with the impact of the development process on the programming of user-needs into residential housing, Chapter II will begin to put into perspective some of the specifics of condominiums and condominium development. This includes such quantifiable aspects as numbers of new condominium units being constructed; allocation of square footage in these units; marketing points which are used to motivate purchases of condominiums (such as tax advantages and benefits of property owner-

ship); and comparisons of living styles and availability of amenities between detached, single family housing and collective condominium properties.

In Chapter III a careful review of the mechanics of the development process is undertaken, the objective being to depict how considerations of risk management, resource allocation, and marketing assumptions almost exclusively govern decision-making processes which determine the eventual use of space. The implicit reality underlying this discussion is that as each development factor is introduced it diminishes the architect's final role as a programmer of space.

This very point is the subject of Chapter IV, which deals specifically with the role of the architect in the development process. Within this discussion it will become clear that many of the personal decisions of the architect are countermanded or predetermined by various actors in the development management system. While the architect brings a sensitivity to user-needs programming to promote supportive living space for the condominium inhabitants, he also is constrained by marketing demographics which mitigate against a sensitive approach to residence design.

Some recommendations will be presented to depict ways in which the architect's role can become increasingly significant in designing space which not only serves the needs of development strategies, but also, and more importantly, assures that living space conforms to the physical and psychic

comfort of the eventual inhabitants.

Condominium Housing: An Overview

For the purpose of this study, the development project involves a product--the condominium itself--and the process by which various actors participate in the formulation of design, marketing, and building. Condominium development is particularly useful as a subject of investigation since it represents a relatively new housing type. Condominiums provide a form of ownership in which much of the property outside of the structure of the individual condominium unit is held in common, while the condominium unit owner enjoys the benefits of single family home ownership.

One benefit realized by the condominium owner is that he can accumulate equity while the property continues to appreciate in value. In addition, he can deduct, as expenses, the interest on the mortgage loan and the amount paid for property taxes. Most importantly, the owner enjoys the personal security and social recognition of ownership--a situation which is sometimes perceived to be synonymous with a stable lifestyle and a sound economic future.

For the real estate developer, who is the primary supplier of this new housing type, the condominium has at least temporarily alleviated the problem of limited land resources. The clustering of condominium units so as to achieve higher density has resulted in reduced land cost per unit of housing.

While the impact of the condominium on the housing market will be examined further in Chapter II of this study, the following table indicates clearly the dramatic increase in condominium units, even as traditional housing starts have declined:

Table I-1[1]

CONDOMINIUM CONSTRUCTION VERSUS HOUSING STARTS
1970-74 (numbers in thousands)

	1970	1971	1972	1973	1974
Condominium Construction*	79	164	299	318	218
Total Housing Starts**	1,469	2,084	2,378	2,058	1,352
Condominiums as Percent of Total Housing Starts	5.4%	7.9%	12.6%	15.6%	16.1%

*Arthur D. Little, Inc., estimates.
**U.S. Department of Commerce, Bureau ofthe Census, Construction Report C-20, March 1975.

Since the condominium market encompasses both new construction and conversion of existing housing stock, this study will deal with condominium housing resulting from new construction. Only new construction will be studied because of the difficulty in assessing the impact of the development process on properties whose prior use as rental housing may require that developers proceed differently when conversion to condominium type housing is initiated. Central to the desire of the developer to "program" effectively is his ability to create housing units from the start; in the context of this discussion, therefore, only new housing

projects will be studied to provide an example of optimum circumstances under which a developer works.

The Development Process

The condominium evolves in response to the development process itself. While this study will comment on the nature and dynamics of housing development more fully in Chapter III, some of the more salient aspects might be useful to mention here.

The development process is a goal-oriented process in which the maximization of profit (return on investment) is achieved primarily through the management of risk, with risk being defined in terms of the allocations of capital resources. Critical decisions whether or not to proceed (and in what manner) are made by actors who determine their own goals on the basis of different, and sometimes conflicting, criteria. Such decisions are not always based on design considerations, of course, and the developer, whose risk in the project is greater, generally is responsible for making procedural judgements related to the project.

An interview with the head of a major development firm illustrates how the principle of systems management is a fundamental aspect of the development process.[2] The developer interviewed cited five systems which he felt constituted the development process: 1) marketing; 2) design; 3) construction; 4) finance; and 5) property management.

In light of this systematic classificatin of plan-

ning, the developer's attitude regarding the production of housing (with a minimum of risk) is not unusual. "We manufacture space," he said, "the use of the space really doesn't matter." The architect, to whom the use of space is an important design consideration, finds such a view contrary to his wish to provide housing responsive to human needs. The inherent conflict of the development process is thus revealed.

The developer's comment cited above should not automatically be misconstrued as indicating a lack of sensitivity toward housing or toward those people who will eventually occupy the housing. On the contrary, a great deal of marketing sensitivity must be brought to bear on the assessment of tastes and preferences of the consumers for whom the housing is being produced. Unfortunately, however, underlying any development effort is a clear mandate to maximize profits. Profit, first and last, is the incentive underlying participation in the business of speculative housing development.

The actors who impact upon the development process in significant ways, and whose contributions will be examined further in this study, are: the developer; the market analyst; the financial consultant; and the builder. These individuals should not be seen as autonomous units in the development effort within which they operate, since they finally represent a single effort generated through the workings of a management system.

Rationale of Study

It may be useful at this point to provide some background material which describes the rationale of this study. During preliminary interviews with some of the developers cited elsewhere in this document, it became clear that the process of development--specifically, the process of development as it exists as a complete system--has to be seen quite differently in the context of "real world" financial constraints. The student or teacher who wrestle with some philosophical approaches to design and development may easily overlook some of the very real restraints that economic considerations will superimpose on the development project.

As a result of this dichotomy between what actually occurs in the development business and what the architect and design expert would like to have occur, the development process has heretofore not been fully appreciated. In particular, it appeared that many of those writers and scholars who had centered their work on understanding the individual aspects of the development process--be it marketing, construction, demographics--had not probed in depth what the effect of these many systems was on the role of the architect. While it is clear that the architect can play a key role in determining the design of living space, it is not as clear that this function is actually achieved because of the many constraints the development process itself imposes upon the architect's work.

The question then became, "What are the specific development factors that mitigate against the architect's free reign as the supplier of design for viable living space that responds to user needs? It was a question that had received little attention in current readings related to condominium development. And in the light of the dramatic increase in the purchase and construction of this housing type, it seemed appropriate and desirable to undertake a thorough investigation which would attempt to unravel some of these problems.

CHAPTER I

THE HOME AS PLACE: MEANING AND SYMBOLISM

In her work, The House as Symbol of Self, Clare Cooper proposed a fundamental question related to making residences appropriate to their inhabitants. "How," she asked,

> . . . do we advise architects on the design of houses for clients who are often poor, whom they will never know, let alone delve into their psychic lives or concepts of self. I have no answer, but if there is some validity to the concept of house-as-self, we must learn ways of complementing and enhancing the image of self of the resident. If in new housing forms we violate this image, we may have produced objective reality which pleases the politicians and designers, but at the same time produces a symbolic reality which leaves the residents bewildered and resentful.[1]

Cooper anticipates, in a very sensitive way, one of the major problems that architects confront in dealing with the dynamics of design. While Ms. Cooper concentrated her study on low and moderate income housing, her comments can be generalized to include almost all forms of housing where a direct involvement by an architect with the client is either not possible or not feasable. This lack of direct involvement with the client forces the architect to rely on assumptions when determining what human factors must be considered. In the process of doing so, the architect thereby risks conceptualizing the users' needs in a way that can be more illusory than real.

In architectural discussions, references are often made to situations in which the geometries of physical environments are seen as supportive of human behavioral needs. The appropriate architectural response to human behavior involves a clear understanding of the nature and extent of what the architect perceives the behavioral characteristics of the users to be. A consideration of user-environment relationships within the architectural design process is the essence of an architect's role as a force guiding the quality of life as it is supported and enhanced in the environment.

Though the experiences people share with their environments are universal, in terms of an architectural sensitivity to place, it is not necessary to look to unfamiliar references to examine the architectural implications of the nature and meaning of place. This discussion will concentrate on a setting with which we are all familiar with and to which we attach deep association. This place is the home. It is where dimensions, materials, and special relationships are imbued with meaning. It is the place where environment and self are inextricably bound, where the architecture, in the words of Gaston Bachelard, "transcends geometry."[2]

From the time of birth, says Clare Cooper, we all share the security and warmth of shelter:

> The child, except in unusual circumstances, is born into a house. Gradually, as the range of senses expands, it begins to perceive the people and environment around it. The house becomes its world, its very cosmos. From being a shadowy shell glimpsed out of half closed eyes, the house becomes familiar, recognizable, a place of security and love. The child's world then becomes divided into the house, that micro-space within the greater world that he knows through personal discovery, and everything that lies beyond it, which is unknown and perhaps frightening . . . As the child matures, he ventures into the house's outer space, the yard, the garden, then gradually into the neighborhood, the city, the region, the world. As space becomes known and experienced, it becomes a part of his world. But all the time, the house is 'home,' the place of first conscious thoughts, of security and roots. It is no longer an inert box; it has been experienced, has become a symbol for self, family, mother, security.[3]

Another approach might be to focus attention on the meaning of home as what Mayer Spivak, in a recasting of Jung, calls an "archetypal place."[4] Spivak sees archetypal places as settings for human generic behavior. They are "the fundamental collection of functional places used by man and other animals in daily life."[5] Archetypal places are spacial-behavioral settings referring to needs that each of us cannot escape as living creatures during the various stages in our developmental life cycles. Some needs correspond to specific stages in our human development while others span our lives as recurring behavioral patterns unique to our human species. "Each phase of the human life cycle has not only a central, drive-related task such as child rearing," Spivak says,

> but also anappropriate (archetypal) physical environment for the proper support and resolution of behavior related to these tasks. Thus, in the context of the right archetypal surrounding, we are free to engage in a critical set of actions--such as cradling and nursing an infant. In order to successfully engage in these movement patterns, and to experience the events fully and to the ultimate satisfaction of the drive, particular temporal and physical criteria must be met. The appropriateness of the total setting, or environment, can be specifically described in terms of four essential boundary conditions: (1) having experienced or being in the grip of a motivating need or drive; (2) having that urge occur within an appropriate time context . . .; (3) having access to an appropriate archetypal space or place; (4) having the object available--as in the case of a nursing mother, the infant.[6]

Spivak then relates the appropriateness of a space to the behavior, biologically signalled, of the person: "The successful resolution of a developmentally based physiological drive or psycho-social need is dependant upon the availability of fitting archetypal place or its approximation in the terms of the culture. The behavior, biologically signalled, is intimately wedded to and threaded through the place. The place is supportive of the behavior to such a degree that in the absence of the appropriate place type, a drive may be severely or completely frustrated."[7]

The origins of our early shelters as indigenous forms responding to an availability of local materials, the natural elements and the unselfconscious building methods of non-architects, have been buried under successive layering of stylistic interpretation, technological advance, and the economics of supply and demand. The results are not

encouraging. In Spivak's words:

> We have lived so long in large cities and houses, that the earliest integration with our natural habitat has been overwhelmed and destroyed. The use of houses as shelters evolved in response to climatic factors, and economic and social evolution. With the development of megalopolitan scale city growth, the integration of the house on the land or the village in the countryside, and the ecological balance in which they once stood, was shattered. We have come a long way from Eden. Nor would most of us recognize the place, let alone be able to live there even as well (or poorly) as we do in our contemporary chaos. Unfortunately, neither do we live particularly well or healthily in our predominant options--houses in cities. We have lost the skills and opportunities, but not the drives of primitive ment. We have, to borrow from Rene Dubos, "overadapted." We are trapped, physically and conceptually, in our houses.8

It has been suggested by a Philadelphia architect interviewed for this study, that "society may not be advanced through the things that are explicit and externalized but through the things that are implicit and internalized."[9]

This might also be true in the case of an appreciation of the house as an intimate place inextricably bound up in our lives. Both Ms. Cooper and Mr. Spivak see the home as supportive of what many of us have felt at one time or another to be the origin of our feelings about place. The house symbolizes many of those things that we have internalized in the course of our emotional development: feelings of warmth, security and belonging; need for shelter and retreat; and drives for satisfaction, affection, and fullfillment. Gaston Bachelard explores these inclina-

tions in his book, The Poetics of Space:

> But over and beyond our memories, the house we were born in is physically inscribed in us. It is a group of organic habits. After twenty years, in spite of all the other stairways, we would recapture the reflexes of the 'first stairway,' we would not stumble on that rather high step. The house's entire being would open up, faithful to our own being. We would push the door that creeks with the same gesture, we would find our way in the dark to the distant attic. The feel of the tiniest latch has remained in our hands.[10]

The house not only provides a setting for our basic needs and drives but also participates in our most private dreams and recollections. It supports and advances the development of humanity as the "place" in our lives. In Mayer Spivak's words, "Archetypal settings are the containers of culture. In them the spirit of a society--the identity, unity and vitality of a people--are initially and continuously moulded."[11]

We now can appreciate the notion of the architectural space we call home as functioning within a person-environment continuum where the need to synchronize place and use is essential to the functioning of the users both in personal as well as social terms. In light of this, it is worth noting that the architectural dialogue has been expanded to include an awareness of the behavioral implications of design decisions involving human interaction with place. But, while the data behavioral researchers have used to support various findings is firmly based in empirical research, it is the architect who, in the end, translates the

data into a vocabulary of physical form.

We shall see in the following chapter that one of these translations has taken the form of a housing vocabulary whose response to various legal, economic, and social forces has evolved into a different way of speaking--a dialect that seems akin to, yet somehow removed from, what I described earlier as having the meaning and symbolism of home.

CHAPTER II

THE CONDOMINIUM AS A HOUSING TYPE

In August of 1975 the Department of Housing and Urban Development (HUD) released a particularly comprehensive report on condominiums and cooperative housing. Definitive sources such as the HUD report are helpful in putting into perspective the exact nature of the impact of condominium development on the American housing market. In many respects, the dramatic upswing in such development has to be seen as a type of phenomenon in itself. But while activity in the condominium market has been great, hard statistics and assumptions about development have been lacking. The HUD report, therefore, can serve an important initial purpose by providing a working definition of condominiums:

> There has been some confusion nationally over the actual definition of the term "condominium" and its corollary definitions. Condominium is a Latin word which combines the elements dominium, or "control" (over a piece of property), and con, or "with" (other individuals). Condominiums are often confused with other forms of housing in which there is joint control over any element of property. Under this broad definition, duplexes, triplexes, fourplexes, and townhouses-in which common walls ("party walls") are owned jointly by adjoining unit owners-and all units within planned unit developments (PUDs) which jointly own land and/or common facilities within the development, might be considered condominiums. The study has chosen, however, to take a strict approach to the problem of definitions. It has considered condominiums to be only those units for which individual ownership is limited to a finite space within a structure. Units which incorporate individual ownership of the land underlying them have not in general been included as condominiums.

The following definitions have been utilized throughout the study. Figure I will assist the reader in visualizing the limitations of these definitions.

- Condominium ownership - a single deed, fee simple ownership of an individual unit and an individual interest in a fee representing the common elements (i.e., purchasers are owners of individual condominium units and partial owners of the common elements).

- Condominium unit - the individual spaces within a condominium project owned as individual estates.

- Condominium, high-rise - a condominium project in which the structure is more than three stories high.

- Condominium, low-rise or garden - a condominium project in which the structure is three or less stories, and in which individual units are attached vertically.

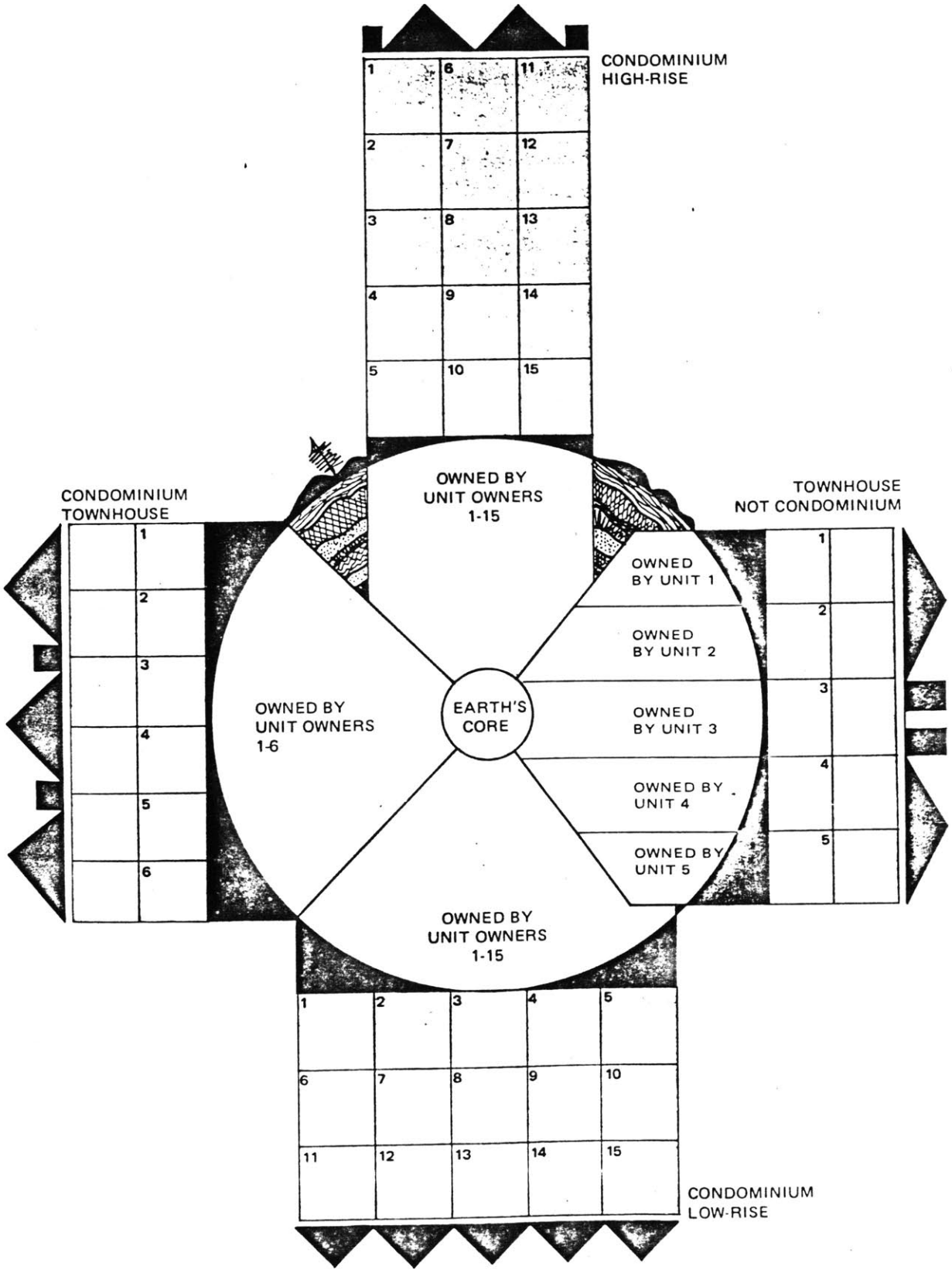
- Condominium, townhouse - a condominium project in which units are attached, side by side.

- Townhouse, not condominium - a project in which units are attached and in which ownership of common walls is covered by a "party wall" agreement, and in which ownership in the underlying land for each unit is owned as an individual estate by the individual owners.

- Planned unit development - a single deed ownership in fee smple of individual home and real property extending to boundary of property. Fee simple owners may be members of an incorporated homeowners (unit owners) association.

(HUD, pp. 2-4)

The cruciform-like figure below depicts various condominium forms which have been related to the earth's core in order to provide a concrete example to the abstract concepts. With the exception of the "Townhouse, not condominium" category, in which specific plots of land are designated to



Condominium Forms Figure II-1 (HUD, p.1-5)

specific property owners, the most salient feature of this type of housing is the concept of the joint ownership of land and building structure in which the majority of property control is vested in the condominium association. This association represents a consensus of property owners on how community property will be maintained in the interest of promoting a stable property value, or one that will hopefully appreciate in value.

The dubious results of consensus control over the architecture can be visualized in much the same way that HUD chose to visualize the limitations of their definitions in Figure I-1. The lack of detail in the representation of owner/ unit modules characterizes the level of design articulation in some condominium developments. Further discussions will suggest that this lack of physical definition may be inherent in the process of development and management and in keeping with perceived economic restraints which put profit motives over the considerations of user needs.

The condominium as a housing type has evolved in part because of a scarcity of a resource (land) and the recognition of this fact by both the suppliers of housing (builders and developers) and the regulators of local housing policy (municipal and state planning boards and building departments). In some cases, the opportunity for profit-making has been exploited by the suppliers, and in some cases municipal governments have over-reacted in an equally excessive manner.[1]

Table II - 1[2]

PREVIOUS TYPE OF HOME	EAST	WEST	COMBINING EAST - WEST
Owned Single Family Home	20%	41%	27%
Rented Single-Family Home	7	11	8
Rented Apartment	58	37	52
Rented Townhouse	3	8	6
Owned Townhouse	3	3	3
Other	4	6	4

There are distinct benefits to condominium ownership that make it a viable alternative for certain segments of the population to the single family home and the rented apartment. Statistically, the majority of condominium buyers are coming from either the single family home or the rented unit. The high proportion of people from the East who have come from rental housing is a confusing statistic. In Boston, for instance, an increasing amount of existing rental housing stock has been depleted through condominium conversion which has had the effect of forcing at least some of the renters to consider the purchase of their unit or a condominium unit elsewhere as a matter of necessity rather than choice. Since the research in Mr. Norcross's book from which the table above was taken does not indicate whether this phenomenon is present, it is difficult to assess exactly which issues were considered in people's choices to purchase their condominiums.

In order to give a sense of the nature of the condominium in terms of its characteristics of size, structure

type, price range, andamenity package, the following HUD tables have been included:

Table II - 2

DISTRIBUTION OF UNITS BY NUMBER OF BEDROOMS

Bedrooms	1974 Condominiums*	1970 All Units**	1970 Owner-Occupied**	1970 Condominiums and Cooperatives**
0-1	18%	18%	5%	27%
2	50	34	30	48
3	21	35	47	25
More than 3	11	13	18	

*Arthur D. Little, Inc., survey of homeowners associations.
**U.S. Department of Commerce, Bureau of the Census, 1970 Census of Housing.

(HUD STUDY, p. III-28)

Table II - 3

INCOME DISTRIBUTION OF CONDOMINIUM AND COOPERATIVE OWNERS

	Household Income			
	Less than $10,000	$10,000-15,000	$15,000-25,000	$25,000 or More
1970 Census, All Households	61%	22%	13%	4%
1970 Census, All Owners	52	26	17	5
1970 Census, All Condominiums and Cooperatives	52	22	17	9
1973 Boston SMSA	3	15	30	52
1973 Washington, D.C., SMSA	2	23	52	23
1975 Arthur D. Little, Inc., Survey	-	22	45	33
1970 Renters	75	17	7	1

(HUD STUDY, p. III-28)

Table II - 4

CONDOMINIUM CONSTRUCTION BY HOUSING TYPE - 1970-74
(percent of total housing starts)

	1970	1971	1972	1973	1974
One Unit	1.0%	1.5%	4.0%	6.3%	8.0%
Two to Four Units	15.0	20.0	30.0	37.1	40.0
Five or More Units	10.0	15.0	22.0	25.0	30.0

(HUD STUDY, p. III-9)

The tables below seem to confirm the widely held belief that the prime markets for condominium housing are the "young married" and "empty nester" segments.

Table II - 5

AGE DISTRIBUTION OF CONDOMINIUM AND COOPERATIVE OWNERS

	Age			
	Less than 35 Years	35-44 Years	45-64 Years	65 Years and Older
1970 Census, All Households	26%	20%	35%	19%
1970 Census, All Condominiums and Cooperatives	16	13	38	33
1973 Boston SMSA	27	17	46	10
1973 Washington, D.C., SMSA*	33	39	22	6
1975 Arthur D. Little, Inc., Survey	21	21	43	15
1970 Renters	45	15	13	17

*Age distribution: less than 29 years, 430-39 years, 40-59 years, 60 years and older.

(HUD STUDY, p. III-26)

Table II - 6

HOUSEHOLD SIZE DISTRIBUTION OF CONDOMINIUM AND COOPERATIVE OWNERS

	Household Size			
	1 Person	2 Persons	3–4 Persons	5 Persons or More
1970 Census, All Households	17%	30%	33%	20%
1970 Census, All Condominiums And Cooperatives	24	41	26	9
1975 Arthur D. Little, Inc., Survey	16	49	30	5
1970 Renters	27	29	29	15

(HUD STUDY, p.

The HUD Report makes the following point:

> The data in this table seem to confirm the observation that condominiums represent an attractive housing alternative to smaller households, not only to young married couples and "empty nesters," but also to single persons, both young and retired. These data on household size distribution correlate closely with those for age of household head and unit size. One should note that while the average condominium unit is approximately 30% smaller than the average single-family home, the average condominium household is also 30% smaller than the average single-family household. Therefore, the living area per person for condominiums is close to that for single-family homes."

(HUD STUDY, p. III-33)

The implications that there is a one-to-one ratio between residential space need and family size is a crude reinterpretation of early, public health generated, minimum property standards, given as a basis for alleviating within units overcrowding. There is no basis, in behavioral science

for such an interpretation and, in fact, research with older people residing in efficiency units strongly indicates that spatial allocations, if based on this type of presumption, are quite unsatisfactory in meeting user-needs. In the same vein, it does not necessarily follow that numerical values can, in any way, gauge the viability of the condominum living environment versus that of the single family home.

The HUD Study above also indicates that the condominium seems to be meeting the appropriate needs of that segment of the population who represent smaller households better than do the spatial qualities of the single family home. One might question this observation on two points: 1) It is not clear whether the condominium is attracting a "smaller household" because it can not physically provide support to the needs of larger or expanding households and is, therefore, not a viable alternative for more varied family groups; or, 2) if this is the case, how will the condominium market respond to the needs of larger households who (as smaller households now), may not be able to afford the cost of a single family home as their needs expand beyond the physical limits of their condominium unit?

The control of the condominium association extends to the building's supporting structure (framework) and the grounds outside of the living unit. This does not hold much promise for the owners of units who might want to add on an additional bedroom or family room as their household expands.

If the expansion is not approved by the association, the owners are almost forced to seek alternative living arrangements in order to accommodate their needs. It may be accurate to suggest that as the majority of present condominium households expand, there will be enormous pressure on the housing developers to respond with a condominium alternative which shares, at least in some respects, the characteristics of responsiveness and potential for change that has always been associated with the single family home.

Given the condominium profile that has emerged in the data, the developer seems to be reacting to a perceived market demand for specific types of condominium units. The characteristics of these units appear to be reflecting a set of life styles that are associated with young married couples, singles, and "empty-nesters." It is possible that in the process of quantifying buyer tastes and preferences into identifiable market demands, the developer is providing features that appeal to the image of what people see as attractive life styles in which they would like to live.

As we discussed in Chapter I, the quality of life as it is supported through a richness of meaning and symbolism, and support of behaviors, relates to substantive issues in the architectural programming of space as opposed to formal or stylistic issues characterized in marketing profiles of tastes and preferences. The implications of the programming of purely stylistic features into the development are obvious in light of the past discussion of the unresponsive nature

of the built environment to the needs of the expanding household.

There is a problem associated with the operation of the development process: It perceives a market demand, based on quantifiable market research into consumer taste and preference, and proceeds to provide stylistic "features" that, presumably, will appeal to the market and hasten sales.

The architectural notion of a sensitivity towards the physical supports necessary to provide a responsive and flexible environment are excluded from the typical market study conducted on behalf of the developer.

In Chapter III, the dynamics of condominium housing development will be explored in order that we may see the functioning of the architectural design process, which is explored in Chapter IV, from the perspective of the constant minimizing of risk through the management of systems of which architectural design is but a part.

CHAPTER III

THE DEVELOPMENT PROCESS: RISK MANAGEMENT AND THE PROGRAMMING OF OUTCOME

Overview

The question of why the developer has been willing to participate in the condominium housing market is not difficult to understand. The incentives are almost exclusively related to the economics of development.

The condominium development has several financial benefits over the typical rental development. The developer views time as money, and the faster one can take oneself out of a project, that is, recover his or her equity investment, the more attractive the project becomes as an investment. Through the sale of units, the developer is able to reinvest in another phase of development or provide some of the "up-front" capital needed to provide the amenities that will make the project more attractive to potential purchasers. In addition, in condominium development projects the long-term risk associated with high vacancy rates in rental housing is not an issue.

The results of the incentive these and other benefits provide for participation in the development of condominium housing is best illustrated by its phenomonal growth rate over the period from 1970-1975:

Table III - 1

CONDOMINIUM GROWTH FOR SELECTED AREAS - 1970-1975

Area	Number of Units in 1970	Number of Units in 1975	Simple Annual Rate of Growth	1970 Units as a Share of Total Occupied Units	1975 Units as a Share of Total Occupied Units
Boston	389	4,855*	231.2%	0.1%	0.5%
Columbus	500	4,600	164.0	0.2	1.2
Fort Lauderdale	23,522**	101,243**	66.1	9.3	27.1
Lake Tahoe	1,000	6,581	111.6	4.8	20.2
San Jose	541	12,523	443.0	0.2	3.0
Washington, D.C.	750	43,954	1,152.1	0.1	4.0
United States as a Whole	85,000	1,252,000	274.6	0.1	2.4

*1974 Units
**Includes cooperatives

(HUD STUDY, p. IV-1)

Both rental and condominium developments are characterized in part by the strategies involved in reaping the economic benefits of cash flow and return on investment. In the case of some rental projects there are often circumstances outside of the developers' control that determine the development strategy. For instance, while in some cases the availability of conventional financing is not an issue, the developer often opts for a government subsidy which, in turn, alters the design guidelines and, in effect, the marketing strategies associated with a conventionally financed project. The process by which a preordained mix of low, medium, and high income tenants are solicited dictates a marketing strategy that differs both in attitudes and emphasis from the conventional approach.

While the choice to seek federal or state subsidies as part of the development strategy is a viable option in the development of housing, for the developer, the choice to participate in a government housing program invites the intervention of the housing agency as a "voice" in the design-decision making process.

The issue of control over marketing and design decisions then becomes one of constraint and compromise since the developer must respond much less to market forces than to the mandates of those responsible for enforcing bureaucratic guidelines.

It should be mentioned that public intervention in the development process, either through some form of government subsidy in lieu of conventional financing or through the planning and review policies of local governments involving the input and evaluation of citizens concerned with the environmental and economic impact of a development project, is more the rule than the exception in the development of housing. However, a consideration of these market forces as a kind of layering of additional controls over the classic market mechanisms of supply and demand has implications that are beyond the scope of this work.

In short, the development process presented in this chapter represents a classic situation in which: (1) the development team is responding to a perceived market demand for housing; and (2) the programming of the archi-

tecture by those other than the architect is the inevitable consequence of what the various development systems perceive their goals to be under the leadership and direction of the developers. The feasibility of a development project is based on a series of assumptions or risk judgements which are then translated into an economic strategy designed to maximize the return on investment. Appendix I, "The Economics of Feasibility," should add to an appreciation of the dynamics of the development process which the following discussion highlights.

The Developer

The stereotyped image of the developer as an engaging but ego-centered person whose sense of purpose borders on being obsessive does not accurately reflect the state of the art of real estate development or the developer. Speculative housing development is a complicated business involving problem solving on a sophisticated level. The "developer" does not generally represent a single entity whose primary task it is to develop strategies for implementing the architect's proposal. On the contrary, the interests of the developer are generally served by specialized systems which provide the essential data on which the developer can make key procedural judgements.

The developer can be seen as falling into three general categories: (1) large companies with substantial managerial and capital resources; (2) small, localized entrepreneural operations or individuals who are well-

financed; and (3) small partnerships or individuals inexperienced and/or thinly financed. While within each category the strategies involved in the development process might differ somewhat in terms of level of sophistication, the developers all share a common operating principal: risk management.

Systems Management

The object of a development strategy, be it in marketing, construction, or a number of other aspects, is to reduce the margin of error in the predicting of outcome. In basic terms, this is accomplished through what can be referred to as systems of management--which can be thought of as the developer's organizational tools. The developer channels a variety of data into specialized systems whose tasks involve the following: (1) providing summary statements about the nature and extent of the impact of their findings on the project proposal; (2) interfacing with other systems in a concerted effort to synthesize and synchronize their findings in order to develop strategic implementation of goals; and (3) representing the developer in dealing with the variety of private interest groups and public agencies that are likely to be encountered as a part of the development process.

Whether these systems take the form of consulting agencies brought in to handle a specific task or in-house operations finely tuned to the operating principals of their development firms, the spheres of their interests

fall into five broad categories, which, incidentally, are not listed in order of importance or impact on the development effort:

1. Marketing
2. Architectural design
3. Financing
4. Construction
5. Property management

The list that follows will outline the interests and activities that fall under each category:

Systems of Management

A. Marketing

1. Market area
2. Demand factors
3. Supply factors
4. Market conditions
5. Feasibility analysis

B. Architectural Design

1. Project design process
2. Project design and planning problems

C. Financing

1. Equity vs. debts
2. Equity financing
3. Long-term financing

D. Construction

1. Cost analysis and bid
2. Supervision
3. Scheduling
4. Quality control

E. Property Management

1. Maintenance
2. Sales

Through an exploration of the development process and in association with the hypothetical case study in Appendix I, it will be shown how strategies and objectives originating from statistical data and market profiles within the systems represents a kind of layering of constraints over the architectural design process--a design process which was intended to translate into physical form.

The layering of strategies and procedural constraints by systems input into the architectural design process through successive reviews of the design proposal represents a subtle form of programming.

Marketing

Of all the systems involved in the formulation of the development strategy, none are more dynamic in their effect on the architectural design of the project than the marketing system. In the words of a partner in a development firm with substantial resources, both managerial and financial, "The cornerstone of our operation is marketing based on risk judgement." The developer goes on to say, "The most important input on our housing is from our marketing people--particularly our women . . . they understand the female buyers' preferences . . . and like it or not, most men leave the basic housing judgements to women."[1]

These comments reveal a perception of the buyer by the developer that raises many issues outside of those involving accuracy. How does the profile of a buyer come about?

What is the nature of its input on the housing product?

A good place to begin is where the development process commences, that is, with a study of the feasibility of a condominium development project. It is the task of the marketing system to compile and analyze data on a wide range of factors involving the initial decision to proceed with the development effort. Factors involving location, population, economic conditions, community attitudes, and other considerations will have to be analyzed in detail in order for an informed judgement to be made about the level of risk the proposal represents for an investment of capital resources. A checklist of areas of interest has been provided:

PROTOTYPE CONDOMINIUM PROJECT MARKET DATA ANALYSIS SHEET[2]

Factor	Favorable	Good	Poor	Not Feasible
Location				
o General area and prestige				
o Availability, cost, and timing of utilities and services				
o Convenience Shopping Work centers Recreational facilities Cultural facilities Transportation systems Highway access				
o Zoning and land use				

Factor	Favorable	Good	Poor	Not Feasible
o Future plans New highways New housing developments New parks and other recreational/cultural facilities				
Population				
o Natural growth				
o In-migration				
o Growth for specific market				
Economic Conditions				
o Employment and per-capita income				
o Wage levels and increases				
o New business growth and diversification				
o Purchasing power				
o Stability of economy				
o Long-range projections				
Housing Supply and Competition				
o Housing starts				
o Absorption rates				
o Vacnacy rates				
o Demand for housing				
o Demand for project considering probable competition				
o Household growth				

Factor	Favorable	Good	Poor	Not Feasible
Community Attitudes				
o General				
o Surrounding neighborhood				
o Public officials				

The outline presented above indicates the range of variables that must be considered in the initial decision to proceed with development. The marketing system relies on a variety of sources for its data. They range from demographic studies which have been published for use by governmental agencies to consulting firms specializing in regional analysis of trends in population growth and existing housing stock to in-house studies about specific consummer-related issues involving the identification of level of taste and preference of the "typical buyer".

It is with the in-house market study of consumer taste and preference that much of the new data that determines the programming of the actual physical form of the condominium housing is compiled, analyzed, and interpreted. For instance, in referring to the planning assumptions that introduce the case study in Appendix I, the choice has been made to provide the following amenities: a club house, two tennis courts, and three swimming pools. Referring to the marketing checklist presented above, some of the data that was translated into the decision to provide these amenities are the following: "General area and prestige", which

indicates a perception of the status level of the consumer; "Recreational facilities", which relates to proximity of public facilities and subsequent need for on-site amenities; "Enlargment and per-capita income", which suggests a life style to which the buyer may aspire; "Housing supply and competition", which sets a specific level of expectation or demand for housing developments within the local market area.

One of the means by which this data is accumulated is the questionnaire, whose use, incidentally, involves a key decision about alternative strategies for information gathering. Should the questionnaire be mailed, telephoned, or presented in a door-to-door canvessing effort? In addition, in terms of proximity to the proposed site, what should the boundaries be in order to insure validity? If canvessing were planned at a local supermarket, would the results necessarily apply to the potential housing market that the development perceives as being its target clientele? It was mentioned during an interview with a developer that the marketing people siezed the opportunity to sign up potential buyers in the course of conducting a door-to-door survey of neighborhood residents. The developer said, "While we were getting their ideas, we asked them if they were interested in buying one. It is our attempt to line up as much market potential in advance as possible."[3]

For one developer, the decision to canvess door-to-door involved a pre-sales effort in addition to a determination

of buyer profiles; clearly, the amount of energy and resources that are, as a rule, channeled into the marketing effort are indicative of the value that the developer places on the importance of assessing risk through analysis of the perceived market variables.

Referring to the amenities issue, a sample mailing, which was used to assess the feasibility of a first-home high use condominium development in Los Angeles, has been presented here to illustrate a point.[4]

SAMPLE FIRST-HOME CONDOMINIUM RESEARCH QUESTIONNAIRE [4]

Date _____ Interviewer _____

1. Name _____ Telephone _____
2. Address _____
3. How long in present residence _____
   If apartment, name _____
4. Have you ever considered owning a condominium? Yes ☐ No ☐
5. Which of the following features are the most important to you when considering purchasing a residential condominium?
   - ☐ No maintenance chores or yard work
   - ☐ On-site security protection
   - ☐ Individual unit ownership and fee simple deed
   - ☐ Possible appreciation in value
   - ☐ Recreational amenities
6. If a residential condominium project were to be developed in the Wilshire Country Club area, how would you rate the following amenities that could be available to condominium owners?

	Essential	Desirable	Unimportant
Meeting rooms	_____	_____	_____
Sauna	_____	_____	_____
Restaurant	_____	_____	_____
Underground parking	_____	_____	_____
Doorman	_____	_____	_____
24-hour security protection	_____	_____	_____
Weight room	_____	_____	_____
Exercise room	_____	_____	_____
Library	_____	_____	_____
Swimming pool	_____	_____	_____
Game and card room	_____	_____	_____
Common laundry facilities	_____	_____	_____
Common storage areas	_____	_____	_____
Beauty parlor	_____	_____	_____

   Other comments _____

7. In contemplating purchasing a high-rise condominium unit:
   a. Which view orientation would you prefer?
      - ☐ Mountains
      - ☐ Country club and golf course
      - ☐ Downtown
   b. Which location in the high-rise would you prefer?
      - ☐ A unit on the first five floors
      - ☐ The middle floors
      - ☐ The top floors

8. Based on your knowledge of your current need for living accommodations, what would you want your unit to include?

- ☐ Living room
- ☐ Separate enclosed dining room
- ☐ Study and library
- ☐ Bedroom
- ☐ Two bedrooms
- ☐ Three bedrooms
- ☐ One bathroom
- ☐ Two bathrooms
- ☐ Three bathrooms
- ☐ More bathrooms
- ☐ Balcony
- ☐ Separate laundry room

9. Which location for a high-rise condominium appeals the most to you?

- ☐ Wilshire Country Club area
- ☐ Beverly Hills area
- ☐ Elsewhere in the greater Los Angeles area
- ☐ Other location _____

10. Which interior elements are important to you in a condominium?

- ☐ Laundry facilities
- ☐ Dishwasher
- ☐ Air conditioning
- ☐ Separately enclosed kitchen
- ☐ Bar-type kitchen
- ☐ Oversized bathtub
- ☐ Walk-in closet

11. If your home is now available for sale, why are you moving? If you are leaving the area, what are the reasons for doing so?

_____

_____

What is your general impression of the quality of this area and the expected quality in the future? _____

_____

Would you consider staying in the area if luxury condominiums were made available? Yes ☐ No ☐

12. Since everyone's preference must yield to their budget, what price range do you feel would be justified for a luxury condominium as you have described in this interview?

- ☐ $40,000–$50,000
- ☐ $50,000–$60,000
- ☐ $60,000–$70,000
- ☐ $70,000–$80,000
- ☐ $80,000–$90,000
- ☐ Could pay more for the right unit

13. If you were to purchase a condominium, would you:

- ☐ Pay cash?
- ☐ Obtain maximum financing?
- ☐ Something between the two?

While the empahsis that the developer places on the market study has severe ramifications for the programming function ususally associated with the architectural process (in situations other than speculative housing development), the nature of the questions on the sample mailing as they are presented to the respondent, as indicated by the nature of the information that they see to acquire, raise serious questions as to the level of choice on which they perceive the market to be basing its decisions.

The questionnaire represents a shopping list of features from which the respondent is asked to choose. The aggregation of these responses is then taken to represent a condominium style which the marketing system perceives as reflecting the tastes and preferences of the consumer. No where in the questionnaire is the respondent asked to make qualitative statements about the nature of the experience one might seek out of a living environment. Specifically, the shopping list questionnaire forces the respondents to relate to the condominium housing in terms of a <u>style of living</u> to which he or she feels they should aspire as opposed to a <u>living experience</u> to which the respondent may associate. An example of this might be the following: Assume that a married couple, whose children have long since married and moved out (what the marketing people would call "empty-nesters") were asked the shopping list type of question: "How many bedrooms would you prefer if cost were not a factor?" Since these people are visited frequently by their

children and grandchildren for over-night stays, they would respond with two bedrooms. Now suppose that the question were rephrased to read: "If you needed an additional sleeping area (e.g. for visiting grandchildren) where would you prefer to see it located--next to the living room, family room, bedroom, in a basement area, or on the second level?" The second question, unlike the first, seeks to reveal the following: whether additional bedrooms are needed; what kind of association the sleeping area should have to the adjacent rooms; and, in terms of hierarchical relationships, whether the need for privacy generally attached to sleeping is seen as being better met on a level below or above the main activity level.

It follows, then, that the nature of the first question pre-reflects and defines the answer in a potentially distorting way. By soliciting a list of optimal features one never gets at an evaluation of the basic product. The second response, while providing quantifiable data about choices involving the need for additional space, also informs the architectural designer about the associations that people make in terms of function and location. In addition, how the architect may propose the organization of sleeping and the family room in terms of the family's relationship to privacy may be an important space planning insight that was arrived at through the result of a questionnaire composed with some degree of insight.

As an example of a statistical accumulation of shopping

list questionnaires, the following buyer profile of the Chicago areas has been reproduced from Housing Magazine.

Figure III-15

THE SHOPPERS

Traditional move-up families

A whopping 60% of the Chicago shoppers are looking for a larger home and 27% for a better area. An investment to dwell in is important to only 32%, but that's because so many—83%—already own their homes. These homes have a median value of $67,300, and the payments are $320 a month.

These shoppers are willing to stretch quite far for a new home. They're interested in a median price of $81,732—2.9 times their median income of $27,521. And they're willing to jump their monthly payments to $484.

The majority of the Chicago shoppers have traditional households consisting of a couple with children *(see table below)*. The 65% in this category are far more than in the other areas surveyed. In addition, only 49% have two earners—far less than elsewhere.

As in the other areas, the bulk of the shoppers are young, with 56% in the 26-35 age group. And they're fairly serious about buying: 26% plan to buy now and 35% this year.

Type of Household

Age of household head	Self only	Couple with children	Unrelated people	Couple only	Single with children
25 and under	4%	33%	4%	58%	0 %
26-35	5	69	1	24	0.6
36-45	2	81	0	10	6
46-55	4	67	0	26	4
56-65	7	20	0	40	33
Total	4%	65%	1%	26%	4 %

Note. Because percentages have been rounded off, totals on tables may not add up to 100%.

EXTERIORS

Any style—as long as it's brick

Which architectural style do you most prefer?

Age of household head	Cape Cod	Contemporary	Colonial	Salt Box	Ranch	Spanish	Tudor
25 and under	0%	24%	16%	0%	28%	20%	12%
26-35	8	26	22	2	20	7	15
36-45	4	24	24	2	33	11	4
46-55	14	14	11	0	43	14	5
56-65	0	11	6	6	56	17	6
Total	7%	23%	19%	2%	28%	10%	11%

Additional findings:

- Among six house types with the same interior living space, most Chicagoans chose a split-level (29%), or a single-story or a two-story with basement (21% each). Only 29% chose a single-story or a two-story without basement or a split-foyer.
- All brick at an additional $2,500 was the overwhelming first choice for front exteriors (66%). Second place went to aluminum siding (no extra cost), which was picked by 16%. Shoppers showed little interest in wood shingle for $1,500 (4%), all-wood siding for $1,750 (6%) or all stone at $6,500 extra (8%).
- For roofs, standard shingles at $1,000 were the choice of 51% of the shoppers, and heavy shakes at $3,000 of 32%. Eight percent even went for slate at $6,000.

EATING AREAS
Make room for the kitchen table

Which informal eating arrangement do you prefer?

Annual household income	Breakfast bar	Nook	Kitchen table space
Under $12,500	0%	0%	100%
$12,500-$15,000	18	9	73
$15,001-$20,000	13	8	79
$20,001-$25,000	16	16	68
$25,001-$30,000	13	12	75
$30,001-$35,000	24	17	59
$35,001-$40,000	25	14	61
$40,001-$50,000	0	20	80
$50,001-$65,000	0	38	62
Total	15%	15%	70%

Item: Chicago shoppers chose about evenly among the three plans they were shown for a home with only one eating area. Thirty-five percent opted for Plan 1 *(see plans p.57)* with a separate family room and the dining L off the living room; 32% for Plan 2, the great room with the dining L; and 34% for Plan 3, the country kitchen.

BEDROOMS AND FAMILY ROOMS

Chicago was the only area where a separate master bedroom was not the overwhelming favorite. Note how the acceptance of grouped bedrooms cuts across all household types.

More on bedrooms:

- Fifty-one percent of the shoppers wanted three and 32% wanted four. A surprise 13% wanted two.
- Fifty-one percent would have one extra bedroom and 27% would have none. Main uses for the extra: guest bedroom (58%), den/library (48%) and hobby/sewing (40%).
- A den is no substitute for a family room, even for couples without children.

If you were buying a four-bedroom, single-story home, which bedroom arrangement would you prefer?

If a home includes a den, must it have a family room? If it has a full basement for a rec room, must it have a family room?

Type of household	Grouped	Separate master	Separate guest room	Home with den: Must have family room	Home with den: Den sufficient	Home with rec room: Must have family room	Home with rec room: Rec room sufficient
Self only	30%	40%	30%	55%	45%	36%	64%
Couple with children	37	39	24	82	18	60	40
Couple only	35	35	30	66	34	65	35
Single with children	20	40	40	33	66	50	50
Total	35%	38%	26%	75%	25%	60%	40%

KITCHEN AND BATH FEATURES
Conservative about upgrades

Chicago shoppers go for the kitchen features that are useful, not merely luxurious. The one exception: the greenhouse window.

Similarly with bath upgrades *(see table overleaf)*, the emphasis is on durability and utility rather than glamour.

One more finding: When asked which fixtures they would want in the master bath if the secondary bathroom had a tub/shower, 48% chose another tub/shower, 31% selected a large stall shower, and only 21% opted for a separate shower and tub costing $900.

Kitchen upgrades

Annual household income	Laminated plastic countertops ($0)	vs.	Ceramic tile countertops ($300)	Single oven ($0)	vs.	Double oven ($300)	vs.	Single oven plus microwave ($650)	Conventional window ($0)	vs.	Greenhouse window ($250)
$12,500-$15,000	91%		9%	30%		60%		10%	88%		13%
$15,001-$20,000	86		14	9		59		31	37		63
$20,001-$25,000	80		20	27		33		41	38		62
$25,001-$30,000	79		21	16		45		38	40		60
$30,001-$35,000	76		24	16		39		45	33		67
$35,001-$40,000	64		36	8		46		46	11		89
$40,001-$50,000	54		46	18		47		35	8		92
$50,001-$65,000	58		42	17		25		58	27		73
Total	75%		25%	18%		43%		39%	35%		65%

Bath upgrades

Annual household income	Fiberglass tub ($0)	vs.	Cast-iron tub ($400)	Single-basin vanity ($0)	vs.	Double-basin vanity ($200)	Light fixtures ($0)	vs.	Luminous ceiling ($300)	Conventionally sized tub ($0)	vs.	Oversized tub ($600)	Fiberglass shower ($0)	vs.	Ceramic tile shower ($150)
$12,500-$15,000	36%		64%	50%		50%	67%		33%	60%		40%	10%		90%
$15,001-$20,000	53		47	40		60	64		36	62		38	29		71
$20,001-$25,000	49		51	40		60	71		29	62		38	24		76
$25,001-$30,000	33		67	37		63	55		45	59		41	25		75
$30,001-$35,000	40		60	28		72	43		57	44		56	21		79
$35,001-$40,000	32		68	29		71	48		52	48		52	9		91
$40,001-$50,000	32		68	6		94	67		33	38		62	13		87
$50,001-$65,000	42		58	23		77	40		60	45		55	45		55
Total	40%		60%	33%		67%	57%		43%	55%		45%	23%		77%

OTHER FEATURES

Fireplaces and bay windows are among the most wanted

Which of these features do you want, given the costs shown? In which location?

	Family room	Living room	Master bedroom	Don't want
Fireplace ($1,800 each)	88%	17%	13 %	7%
Wet bar ($450 each)	57	1	0.4	42
Sunken conversation pit ($750 each)	19	29	0.9	53

Note that many shoppers wanted more than one fireplace.

Other popular features: bay windows (38% wanted them), skylights (33%), French doors (32%), central vacuum cleaner (29%), intercom system (26%). Whirlpool baths ranked lowest, with only 8%.

When it came to which features the builder should include, carpeting at $1,500 and a patio slab at $350 were the only ones with a sizable showing. The shoppers preferred to provide their own rear-yard fencing instead of paying the builder $500, and they weren't sure whether to provide their own deck or screened porch or do without them.

ENERGY SAVERS

Lots of interest in the tried and true

Which of these energy-saving items do you want, assuming the price of your home would increase by the amount shown?

	Want	Don't want
Upgraded insulation ($1,500)	95%	5%
Double-glazed windows ($2,000)	86	14
Solar water heating ($2,000)	25	75
Solar water heating and house heating ($13,000)	21	79
Air circulation fireplace ($300)	62	38
Heat pump ($500)	44	56
Entrance vestibule ($800)	72	28

More findings: Sixty-eight percent would go for a flat standard ceiling rather than a high/sloped to save on heating.

- Seventy-one percent would install double-glazed windows at $2,000 rather than cut window area by 10%. At income levels over $40,000 a year, more than 90% prefer to pay for double-glazed rather than lose windows.

THE COMMUNITY

Suburban and traditional

As an alternative to surburban living, have you thought about buying a home close to the city center?

Type of household	Yes	No
Self only	18%	82%
Couple with children	15	83
Couple only	12	88
Single with children	11	89
Total	14%	86%

The few shoppers who would consider moving closer to the city would prefer newly built units only (43%), a rehabbed unit (14%) or either (43%).

It should be noted, however, that the shoppers were surveyed at suburban developments, and that's what they were looking for.

Item: Fully 89% want large, back-to-back rear yards rather than smaller yards separated by common greenbelts.

The results of a marketing study taken in this fashion may lead to the following conclusions:

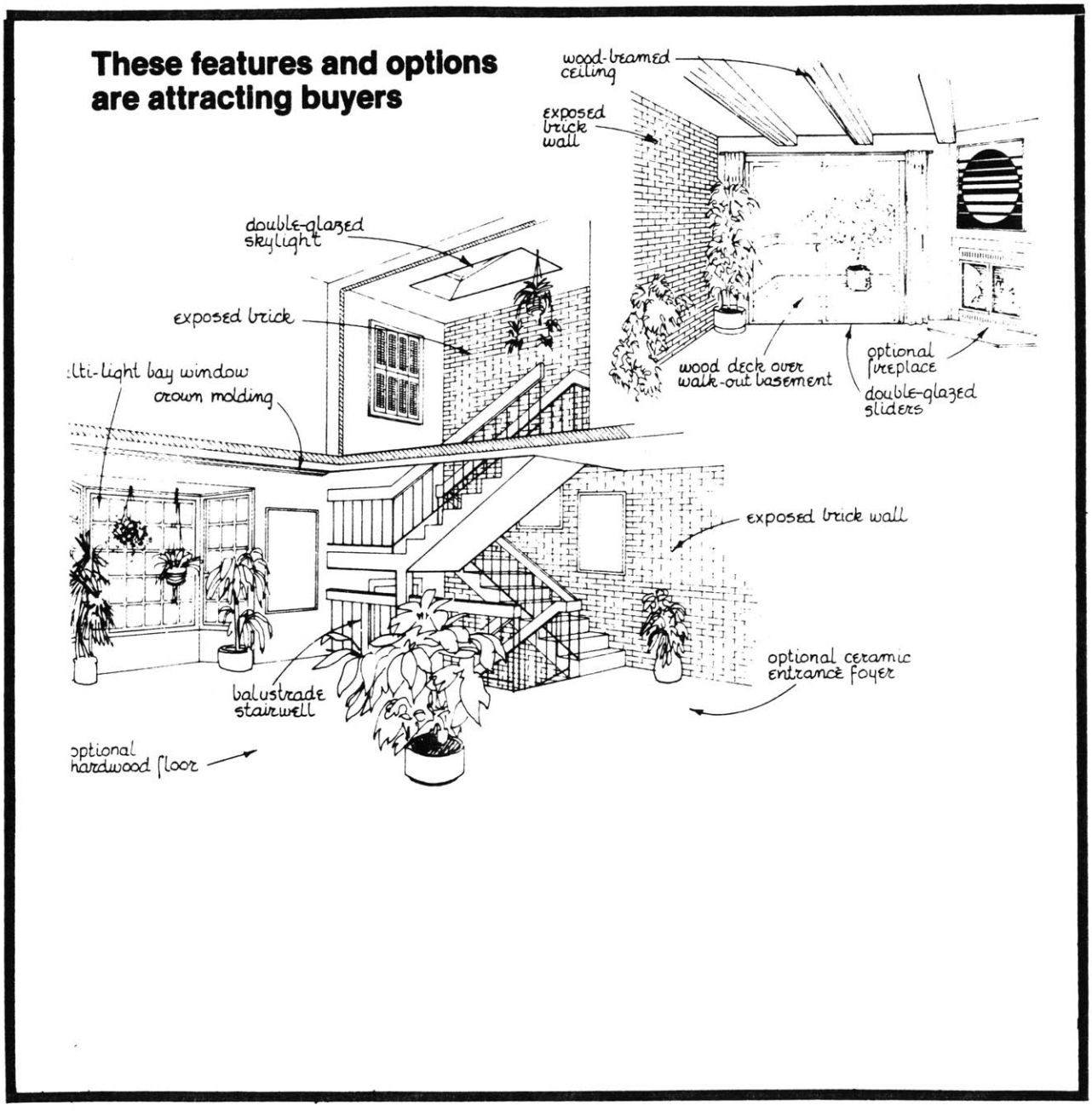
- o The majority of buyers prefer three bedrooms;
- o The extra bedroom would be used in the majority of cases for a guest bedroom;
- o A majority prefer a separate family room;
- o A greenhouse window is a must in the majority of homes;
- o The majority of respondents from all age groups prefer a ranch style home.

While these statistical results may reflect accuracy in terms of the number of responses, what they reflect in terms of the quality of living environment is not at all clear. What is clear is that these results are often programmed at the feasibility level of project evaluation in a determination of a style of product that will appeal to the market and hence reduce the risk of a misallocation of the developer's resources.

The periodical literature whose audience is made up of builders, developers, and real estate marketing people seems to pose as many questions to the issue of people's images of home as it objectively attempts to answer. The identification of a California style of building is seen by the authors as consisting of a number of specific architectural elements for which consumers of homes have shown a "documented" preference. Among these details are: an exposed brick wall, an open floor plan, beamed and cathedral ceilings,

patio with sliding glass doors, sky lights, and a loft overlooking another room.[6]

Figure III-2



In terms of peoples' images of their homes, are they not possibly reacting against some rather confining or architecturally unexciting environments they have experienced in the past; or is the need to interact with an environment with some associative qualities provoking their market study preferences; or are status symbols alone being tapped?

It seems to me that when confronted with a shopping list of architectural choices, the home buyer would select those ingredients that came closest to filling the recipe for their image of a home. But could a documented market demand for an exposed brick wall speak as clearly to a person's reaction <u>against</u> slick, textureless surfaces in the home environment as it seems to suggest <u>a preference for</u> a specific choice of earthy materials? Could the need for architectural definition in the way of building materials and their aggregation not be interpreted in ways other than providing a brick wall as a stylistic gesture to the preferences documented in a shopping list type of market study? Are the marketing study preferences for lofts overlooking other spaces and cathedral ceilings as much an <u>unspoken need</u> for real associative qualities in people's environments--since they are a literal translation of builder options in the perception of consumer preference? Is not the desire for large sliding glass doors leading to a patio indicative of a human need to have some positive association with the landscape. Could this not be interpreted in ways other than the insertion of operable glass into the flat plane of the

wall to achieve the connection. There are ways to provide the same level of participation with the outdoors without puncturing a wall in such a literal fashion. Perhaps the inside-to-outside association of the user has as much to do with the experience of transition from in to out and the establishment of a visual continuity as it does with the convenience of sliding a glass wall out of one's path to the landscape.

These comments on the preferences of consumers as they are perceived as market demand is not intended as an indictment of the market research methods on which the architecture of some housing developments are based. It would be inaccurate and unfair to suggest that all documented consumer choices for specific living and life style options suffered from a lack of validity. Rather, the comments are addressing the ways in which peoples' needs for a senstive and responsive environment, as the primary setting for a richness of experience, are not met by the architect whose primary role should be that of a user-needs programmer through the establishment of performance requirements. Rather, it is the marketing system, through the specification of design-related criteria discussed earlier, which constrains the architectural process by imposing specific design "features" previously identified as reducing risk through a predictably wide market appeal.

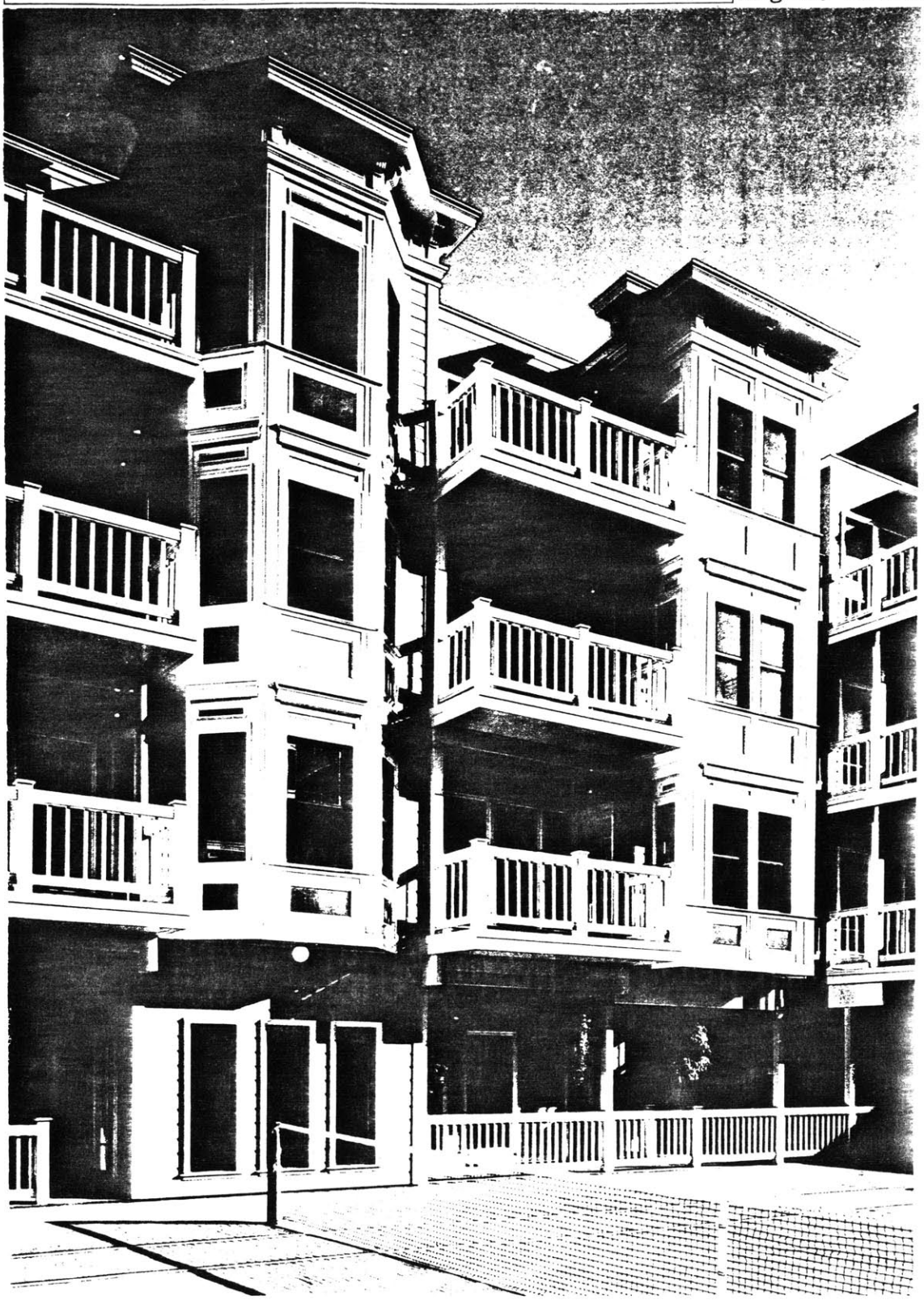
MARKETING RELATED COMMENTS

I would not deny the importance of programming architecture references from both the past and present into the housing environment, since it is richness of detail and the recollection of past generations that lends meaning to our lives; yet I wonder if some of the more literal translations of peoples' affections for the past in new construction don't add up to a series of mixed messages, that do more to prevent the meaning of place than enrich it.

Multifamily in Victorian garb

An in-city project surprises outside and in

Figure III-3



This example, which reflects an appealing Victorian style of living, exhibits an identity problem in the sense that the style immediately vanishes as one enters the living unit. The users are forced to separate the public fascade from the private domain of their lives.[7]

Finance

In terms of the programming of the housing by non-architectural processes, the quote that was cited earlier having to do with the developer's strategy of lining up preliminary sales, illustrates the variety of issues to which the housing must be responsive. A pre-conceived notion of the housing type must be at least conceptually fixed in the mind of the lender if a determination of risk is going to be made. Since the project will not proceed without a commitment from a lender that funds will be forthcoming, the market ability of the project is an essential quality that must be preserved in the architectural design. This issue of marketability, as the lender percieves it in terms of the design, imposes another constraint on the architectural design process. This point was illustrated well by a developer when the reason was given for the marketing strategy behind the canvessing effort by the marketing people:

> If you can go in [seeking financing] with a list of preliminary marketing results--fifty people who have signed on--in a tight market, you're more likely to get the financing.[8]

In this developer's case, the strategy to "line up" a strong preliminary market centered on the need to convince the lender that market penetration was potentially good since ordinarily the way in which the financing is structured around the construction phase in inherently "risky." In the words of the developer, "It makes lenders feel good, particularly a construction lender who is very much more exposed in a condominium than he is in a rental project because there is no permanent take-out for him on an organized basis [long-term mortgage loan]. He just has a series of individual mortgages that take him out--so his risk is much higher."[9]

Another relevant issue for the lender is the notion of qualifying income, which has been summarized in the case study on page 92. As it is essential that the condominium units be affordable, much of the economics of feasibility, including budgetary constraints in the cost of building what the architect has designed, is determined by what the market will bear in terms of price level.

The lender's role in financing the construction of the project has a substantial impact on the design of the housing in that a cost-conscious program must take precedence over all other issues if the project is to get off the ground. In most cases, the cost effectiveness of the architectural design will be scrutinized in terms of minimizing risk, by the marketing, construction, and property management systems whose relative fields of expertise are brought

to bear on the programming of the architecture in ways that, in many cases, leave little to the imagination and resources of the architect.

Construction

Without question, the builder is the one participant in the process whose parameters must be met. If the builder exceeds the construction budget, the project's success would be jeopardized. Consequently, the builder is the person who programs much of the architectural design. The avaibility of materials may determine interior and exterior finishes; the price of lumber stock could dictate the choice of carpeting vs. hardwood flooring; the availablity of bricks vs. cinderblock on a regional basis may decide the building system and, further, the organizational qualities of the aggregate building form that are generally determined by that specific building system.

Referring to Appendix I (Assumption B), which states that the units will be constructed of wood panel construction assembled at a factory and shipped to the site, a decision has been made to opt for the expedience and quality control inherent in the fabrication process that is usually associated with factory-produced building panels. This building system is characterized by a modular design framework in which the pieces are assembled in a pattern that ultimately provides closure and gives form to the architecture. The process by which panel construction is fabricated,

shipped, and assembled has the effect of programming the nature of the space which it and, in that sense, shifts the emphasis of programming from the area of user needs to the accommodation of the building system.

Summary

Traditionally, the arena for the user-needs dialogue has been within the architectural design process where conceptualized space is moulded around anticipated behavioral expectations and programmed to respond in supportive ways to the needs of users. Within the context of speculative housing development, it would seem that the architect, of the various participants, is best prepared to lead the discussion of user-needs and argue for its place in the programming and planning of space. Yet here lies the paradox of the architect's involvement in the development process: the design process by which the architect attempts to program user-needs through the articulation of space must also address the non-architectural needs of the development process which has been programmed by market demand to minimize the articulation of space in order to satisfy a broad range of users. The architectural design process is constrained in many ways by development strategies that do not have as one of their major goals user-needs objectives.

While it would be unrealistic to argue that the level of involvement an architect is likely to experience with a client in the process of custom designing a single family

home should be equalled in the development of multifamily housing for speculation, it seems reasonable to expect that the design process would speak with more sensitivity to the needs of the anonymous client, for whom the condominium housing is being produced.

As it has been shown, the layering of constraints over the archtectural design process seriously subverts the architect's most effective role as that of a user-needs programmer.

Chapter IV will address the nature of the architect's role as it relates to the dynamics of the development process. In doing so, the emphasis will shift to an overview of the nature of the constraints imposed upon the architect's decision.

CHAPTER IV

THE ARCHITECT'S ROLE IN PERSPECTIVE

In the private housing sector, the homowner is allowed a depreciation expense for tax purposes, in recognition of the fact that the average building structure has a finite life expectancy. The private residence, for tax purposes, has a life span of forty years. In reality, it is reasonable to expect that the average residence should function adequately for almost double the depreciable life span or about eighty years. In the light of this fact, the private dwelling place represents a substantial long-term investment.

In the public sector, while the accounting principals of depreciation and life expectancy are applied with the same accounting logic, there is a different perception of bulding stock than the perception of the home, in that it is seen to represent a social investment in a physical support for services that will benefit the public.

The perception of public building stock as serving a public function provides those people entrusted with representing the public's interst with a mandate. In simple terms, the mandate defines a clear sense of purpose: every available resource should be brought to bear on the design of public facilities, unlike the privately owned housing stock where a different set of values is operating on a much lower level of regard. The resource that we are interested in for the purposes of this study is the architect, whose primary role, in the public sector, involves defining and

implementing, in spatial terms, the goals of the municipal client. This process involves sychronizing the client's needs with the architecture through a systematic programming of activity into the built environment.

Programming for user-needs is the primary purpose of the architect's participation in the process of designing municipal architecture. It is widely accepted in the public sector that the public's interest can best be served when the outcome of a proposal is planned in a sensitive and systematic way.

Turning to the private sector, the logic that supports the argument for accurate programming of user-needs has not been extended. It has been shown in this study that the condominium is not a passing phenomenon but a distinct housing type which represents a significant percentage of the total residential housing stock in this country. The condominium, as a form of ownership of a built environment, also represents a social investment. For some people, it is a viable first-home purchase, and for others, it presents a logical alternative to an evolving set of needs that are associated wit the later stages in the life cycle.

The condominium, as is the case with the single family home, should provide the inhabitants with a sense of place; with sensitivity and responsiveness; and with the opportunity for close and continuous associations with the built form. A richness of experiences should be considered within the architectural dialogue as a programmatic objective in the design of the condominium space.

Chapter I of this study underscored the need for a programmatic sensitivity towards articulation and variation in the home environment, with the architect being the most valuable resource in the fulfillment of that need. Through the architect's imagination and technical resources, the needs of the anonymous client, the condominium buyer, stand a reasonable chance of being met. Why the architect does not have a mandated purpose in the programming of user-needs for speculative housing has something to do with the risk-management aspect of housing development.

Clare Cooper summarizes the reality of the level of the architect's role in the development of housing:

> . . . of all the actors in the process, the designers had the least power, with power defined as the ability to insist upon a certain alternative. In other words, we discovered a very complex relationship between the designer and the housing, and we discovered a very large cast of characters in the production of housing, among whom the designer is relegated, if not to a bit part, at least to the ingenue.[1]

We have seen the architectural design process in the context of "a large cast of characters" whose primary function is one of systematically reducing the level of risk inherent in the development of speculative housing. The nature of the architect's role as a programmer of user-needs runs completely contrary to the nature of the developer's role which involves the maximization of profit throught the management of risk. Consequently, the architect has almost no leverage in arguing for programmatic sensitivity since the benefits that would extend to the condominium buyer

are difficult to quantify in terms of the developer's assessment of risk. If the product were rental housing, a case could be made for providing a sensitive environment in terms of life-cycle costing where the frequency of turnover and high vacancy rates would be reduced. This is not the case with condominium housing. The buyer is the person who must bear the life-cycle costs.

Turning attention to the development process, one discovers additional facts that support the notion that the architect's role is as far removed from initiating the development process as it is from controlling the outcome.

If we recall the origins of the planning assumptions on which the case study in Appendix I were based, that is, from the strategies emanating from the marketing, financial, and construction systems, we will appreciate Clare Cooper's comments on her conceptualization of the production of housing: "In terms of sequence, for example, we assumed that the design process does, in fact, begin with the designers. But we found that a great many events pre-date the activity of the designer's, so that the designers actively enter into the process after it has begun."[2]

With the analysis of feasibility as the point of departure, the development process proceeds with the selection of a site and an option agreement to purchase--the establishment of fixed numbers of housing units, density, unit mix--and an amenities package, before it ever turns to the architect for a schematic translation of the pre-established numbers.

As was mentioned earlier in Chapter III, the cost efectiveness of the architectural design will be scrutinized in terms of minimizing risk, by the marketing, construction, and property management systems whose relative fields of expertise are brought to bear on the programming of the architecture in ways that, in many cases, leave little to the imagination and resources of the architect. Repeatedly, the architectural design is scrutinized for the accuracy with which it relfects the life style of the buyer profile; for the relative economies of alternative building systems and construction materials; and for its optional design features and their relevance to the percieved market demand.

The process of evaluation and re-evaluation of the design can be described as "consensus"[3] design in that everyone involved in the development effort must feel comfortable with the physical translation of their system's goals. In all of this clamor for mutual satisfaction, the voice of the anonymous user, as spoken through the architect's futile gestures towards specificity and articulation of design, is reduced to a whisper.

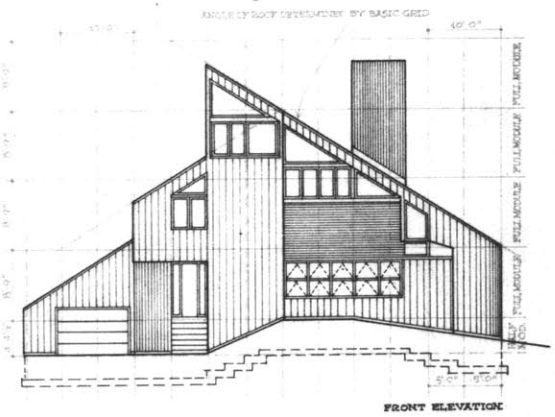
If the user's voice is heard, the response, in terms of the housing product, bears little resemblance to the issues that have been raised in the architectural user-needs dialogue. On the contrary, what the developer hears is a muffled voice that emanates from the market research. The responses to the shopping list of features speak to a <u>style</u> of living replete with optional details that are superficial

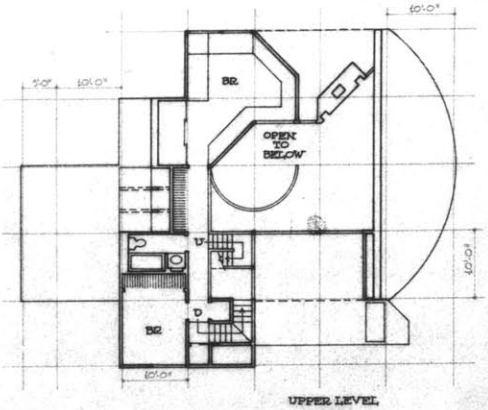
references to the charm of the past; to images of grand architecture in the surface treatments of fascades; and to status and prestige in the arm's length lists of project amenities. Any reference to a richness of experience through an interaction with the built environment seems hopelessly transparent in comparison.

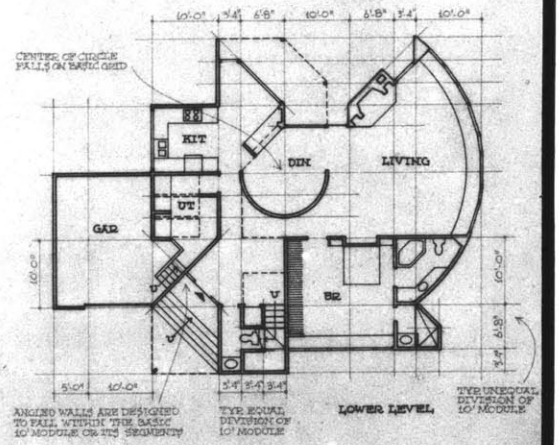
At the architectural level, the sacrifices that have been made to the articulation of space and symbolism in forms are justified by the development process with the arguments: (1) variety of choice, and (2) expedience of construction. Confronted with a need to accommodate a wide range of buyers, the building system must be flexible and standardized at the same time. By the word flexible, it is not meant to suggest a kind of responsiveness to change over time, rather it is understood to mean flexibility at the time of construction or assembly, which ever might be the case.

Figure IV-1[4]

Curved and angled walls work off the horizontal module



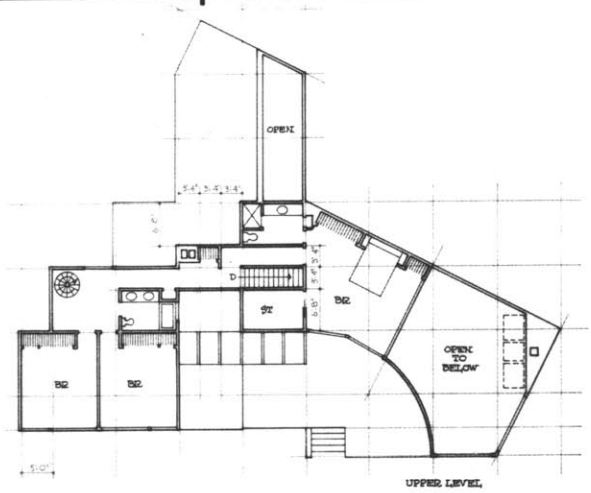




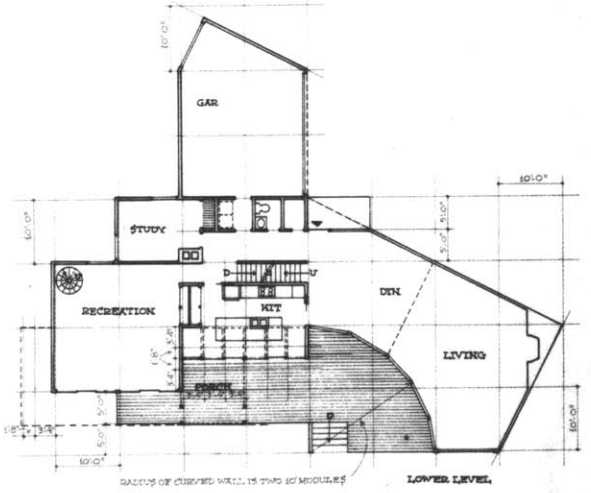
Striking interior spaces—like the living-dining room pictured on the facing page—are designed with multiples and/or divisible segments of the 10′ horizontal module used in architect DeVido's system.

Neither the curved window wall nor the semicircular partition that screens the dining area is difficult to lay out in the field, since both are dimensioned from points within the module *(see plans)*. And as the plans also indicate, it's just as easy to lay out angled walls. Note also from the elevation above that roof angles are also determined by the basic grid.

Dramatic volume space works off the vertical module



UPPER LEVEL



RADIUS OF CURVED WALL IS TWO 10' MODULES

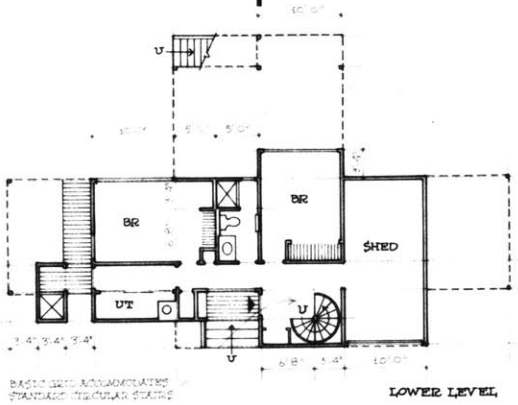
LOWER LEVEL

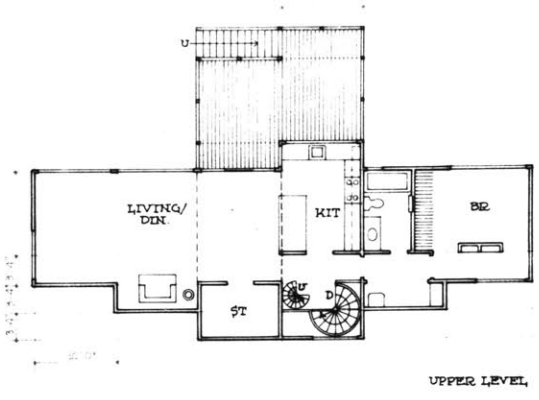
PHOTOS: PAUL WARCHOL/COURTESY HOUSE & GARDE

Layouts for multilevel spaces, like the living room above, are simpler to figure out than those in non-systemized plans. Window headers, for example, are always placed 6'10½'' above an "imaginary" second-story floor. And that's predetermined by the basic 8'9'' vertical module.

Note: For every system there must be exceptions. DeVido's requires a departure from the module where specially sized equipment is specified. The kitchen in this plan is an example.

Stock building materials work with both basic modules





PHOTOS: PAUL WARCHOL/COURTESY HOUSE & GARDEN

Special-order materials aren't required in DeVido's modular designs—another money-saving feature of the system. In the house shown here, for example, all windows are stock sizes, siding is 8′ shiplapped rough cedar and interior walls are finished with 8′ cedar boards. The system also utilizes precut studs.

Figure IV-1 has been presented here to illustrate the notion of flexibility through modularity as a concept on which the entire building system, organization patterns, and spatial dimensions are based. The floor plans and sections rigidly conform to the ten-foot horizontal and eight-foot, nine-inch vertical dimension.

The plan does not deviate from these dimensions and in not doing so creates a kind of uniformity throughout the place. As one looks horizontally, the spatial definitions occur at roughly ten-foot intervals with the fenestration on the exterior walls always broken at a height of 6' 10 1/2". The possibility of receiving mixed mesages or cues from a standard ten-foot dimension that is reflected, for example, in both the width of a cooking area and that of a sleeping area, are heightened considerably. The same problem exists in the vertical dimensions when a common measurement is applied. The visual signals that are provided in more articulated places than this example allow the user to associate a particular spatial quality with a set of experiences, and, in doing so, establish a person-environment continuum.

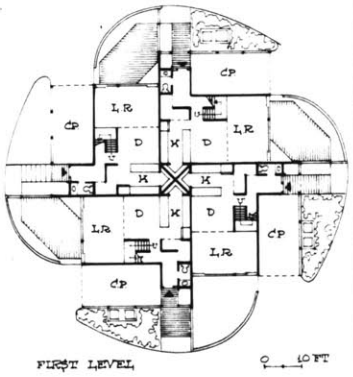
The focus on modularity is a kind of architectural "slight-of-hand" in which the suggestion of a custom-designed home is only a marketing strategy. The needs of people involve variation in the built environment and the association of dimension wih use. The building system that is presented here has been custom-designed only to respond specifically to an expedient method of construction.

Modular system permits shift-around floor plans

Shown at right are three Sea Gardens townhouses—each using the same three-level floor plan. (The different townhouses are shown from left to right, their different levels from top to bottom.)

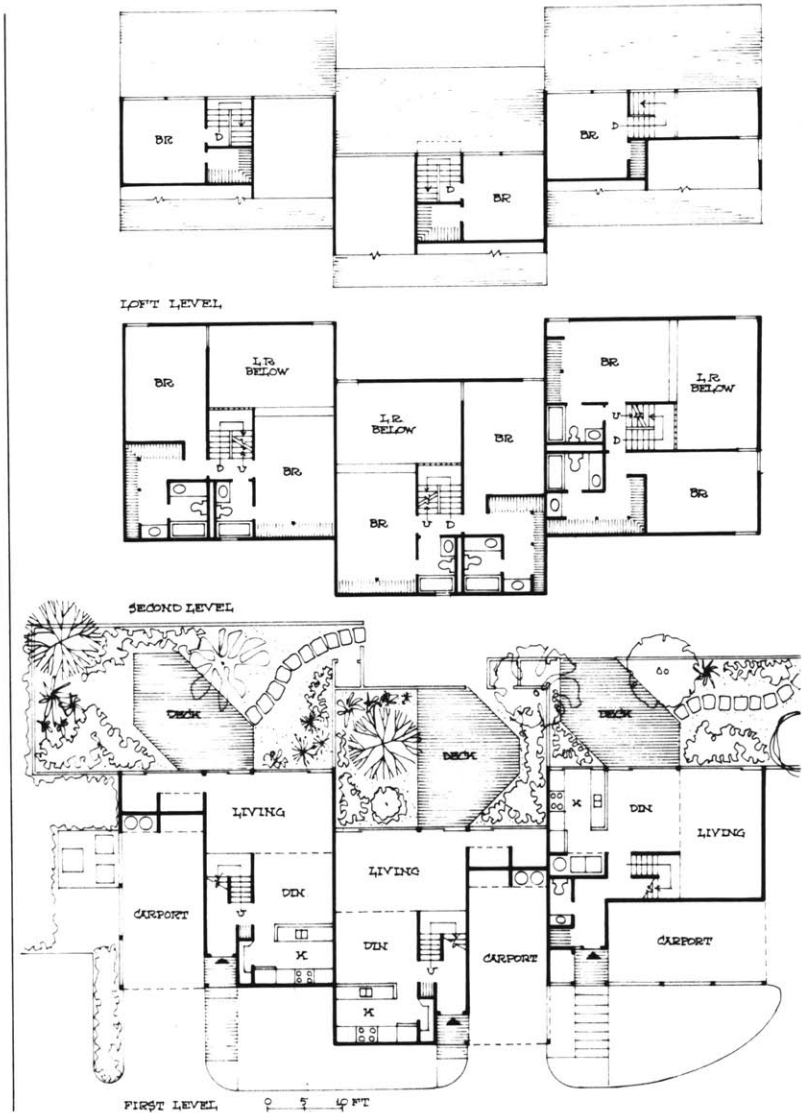
The floor plan uses square modules positioned around a central stairwell. So, inside the house's exterior shell, the floor plans can be shifted about in different directions to vary entries and take advantage of terrain.

This is illustrated by the first-level plan of four townhouse units shown below. Here, the layouts are in the shape of a pinwheel, with entries facing all four compass points.



Turning or shifting the floor plan also changes the view of its two-story living room from the entry. Since the house's roof pitch is constant, clerestory windows can run the length or the width of the room. This alters its perspective and lighting.

Volume ceilings in the living room and second-floor master suite, and the entire third-floor sleeping loft occupy what is normally attic dead space under the roof.



Interior balconies overlook a two-story living room that is lighted by clerestory windows under the roof's peak

Figure IV-2 presents a similar problem in the organizational qualities of the spaces, as did the previous example. While the actual layout of the floor plan seems unobjectional, the problems arise when the aggregate units are placed in the context of a site. With most sites, there is usually an identification with a front and a rear. As can be seen in Figure IV-2 in the spin-wheel configuration that the front of any one of the four units is, perceptually, the rear of the unit on the opposite end of the wheel.

Symbolically, this situation creates some confusion in the user's minds about their position in the public/private spatial hierarchy that is always associated with the front and rear of the average single family home.

In addition to the association problem mentioned above, the degree to which the organization responds to energy-related issues of sun, orientation, and appropriate fenestration is non-existent.

In the course of this study the architect has been characterized as a professional whose training in and exposure to a wide range of user-environment issues has provided him or her with the skills that are necessary to adequately determine the needs of the user and then proceed to translate those needs into built form.

As a potential programmer of residential housing, the architect's resources could be tapped as a participant in the development process for the long-term benefit of society. Yet, the logic behind the mandate to secure society's invest-

ment in public buildings through the deep involvement of the architect at the level of programming at the outset of the feasibility study is somehow perverted in the speculative housing market.

The modus-operandi of the development process involves the management of risk and the notion of a mandated effort to insure that the interests of society are met does not enter into the developer's strategy. The interests around which the developer operates are those of profit maximization and the accurate judgement or risk.

It would seem that the architect, as he or she is currently perceived by the development team, is best characterized as the "captive"[6] member of the process. All of the mandated freedoms of user-needs programming that the architect enjoys, at least in principal, in the public housing sector have been swept away by the process in which the design of speculative housing takes place.

If the architect is to have an impact on the design of speculative housing, the development process must be met on its own terms. In some way, the notions of cost benefit and user-needs must be married if the architect is to gain any leverage in the decision-making process.

As noted in Chapter III, there is an inherent problem in the type of questionnaire that is presently used by the marketing system to develop a buyer profile. Operating under the assumption that taste and preference are quantifiable, the questionnaire elicits a response that is quanti-

fied in terms that can be applied to the qualities or features found in the condominium unit. The nature of the question, if asked in quantifiable terms, pre-reflects and defines the answer in a potentially distorting manner. By soliciting a list of optional features, one never arrives at an evaluation of the basic product. A profile of a popular style of living emerges as opposed to an evaluation of an appropriate setting for living.

The sample question related to the number of bedrooms, for example, illustrated how a rephrasing of the question generated both quantitative and qualitative data that served the needs of both marketing and architectural interests.[5]

The researching of potential buyer's preferences with a marketing framework currently represents a function that bypasses the architect. It can be argued quite convincingly that by broadening the scope of a questionnnaire that seeks to quantify preference and to encompass some quality judgement responses about the living environment (i.e., associative qualities of spaces both to one another and to the landscape) the architect's sense for some of the respondent's subliminal feelings about their home would be sharpened. In doing so, the architect would more accurately reflect the buyer's wishes as they could subsequently be translated into the blueprint. This additional accuracy would further minimize the inherent risk with which the developer is faced in predicting sales potential. In addition, this architectural research function could be accomplished at an incre-

mental cost through an established mechanism within the development process--the market feasibility study.

One area upon which this architectural strategy might impact is the choice of building materials and the building system. Given a situation in which the tradeoffs between a stick-built system of building versus a masonry prefabricated panel system were about equal in terms of cost, the decision might rest solely with the builder whose personal preference or familiarity for one system over the other might dictate the outcome (i.e., while the panel system offers economies in production time and labor, the masonry system might be more feasible, given an abundance of material and, therefore, a substantial reduction in unit cost). Consequently, the architect, who must respond to the builder's dictates, would be forced to live with a building system, if in the instance that the panel system were chosen, that might not respond to the architect's preference for qualities that were needed in order to program user-needs into the living environment. The architect's choice of a masonry system (structural brick) could provide an opportunity to express the building system as a finish material. The richness of texture and finish that people associate with a brick surface would become a part of their living experience in a meaningful and symbolic way. Armed with a documented preference for texture in some finish materials (as indicated hypothetically in market study responses), the architect could respond to the builder's dictates with an

architectural mandate for a masonry system that was supported with data based in fact.

In the decision-making process and ultimately on peoples' lives, through the built environment, the architect should bring all of the available resources to bear on the expanding of the role of programming user-needs. In short, this involves the subtle manipulation of existing means: the raising of consciousness of those people in the development project who would be convinced that to the extent that risk is minimized, the means are justified. The inevitable result is that as a rich and responsive environment is reintroduced into peoples' lives, a meaningful balance between people and their places of living will be achieved and the resulting equilibrium will perpetuate itself.

SUMMARY AND SUGGESTIONS FOR FURTHER RESEARCH

It has been suggested throughout this study that ideally the proper role of the architect is to program a richness of experience into the environment which he or she designs. Given this situation, meaning and symbolism transcend geometry. Unfortunately, however, we have seen that what customarily transpires is that space is programmed on the basis of preconceived notions of what buyers will want in their housing--notions which are based on quantified marketing studies. These studies then provide the basis of the development strategy, effectively minimizing the active input of the architect in determining the programming of space. In fact, the controlling of risk as it applies to the scrutiny of the architectural design process by the systems of management leaves little to the imagination and resources of the architect. (see figure IV-3, p. 80-A)

Implicit in the discussions raised by this study was the notion that the architect is better equipped to anticipate user-needs than his other development partners whose primary interest is in maximizing profit and minimizing risk. Given the restrictive nature of market forces, the architect is not likely to gain additional control of the design process until remedies are implemented which address some of the inherent deficiencies in the development process as it now exists. (see figure IV-4, p. 80-B)

Several specific remedies could include:

The Development Process:
Constraints on Architectural Design

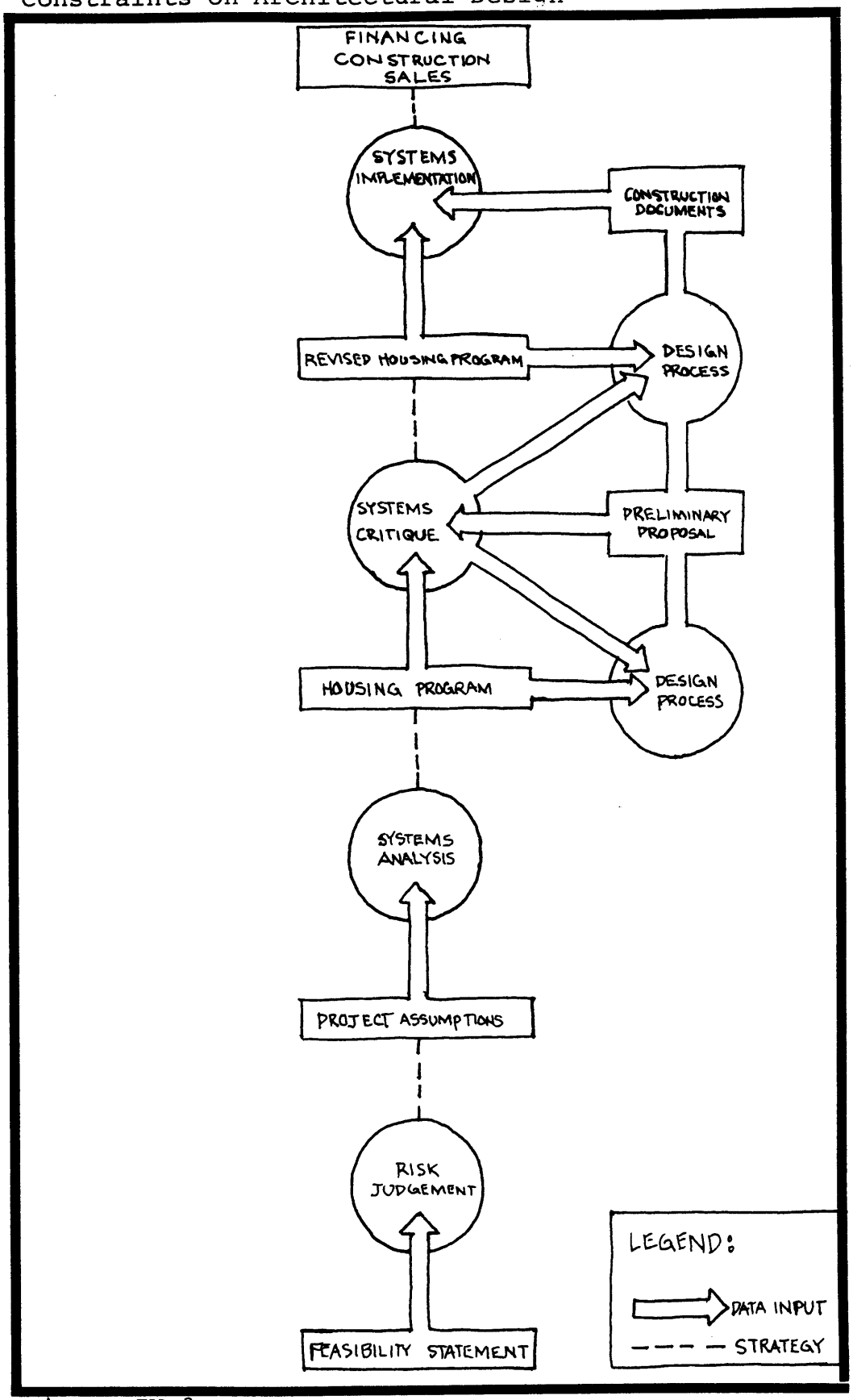


Figure IV-3.

The Development Process:
Proposed Integration With Architectural Design

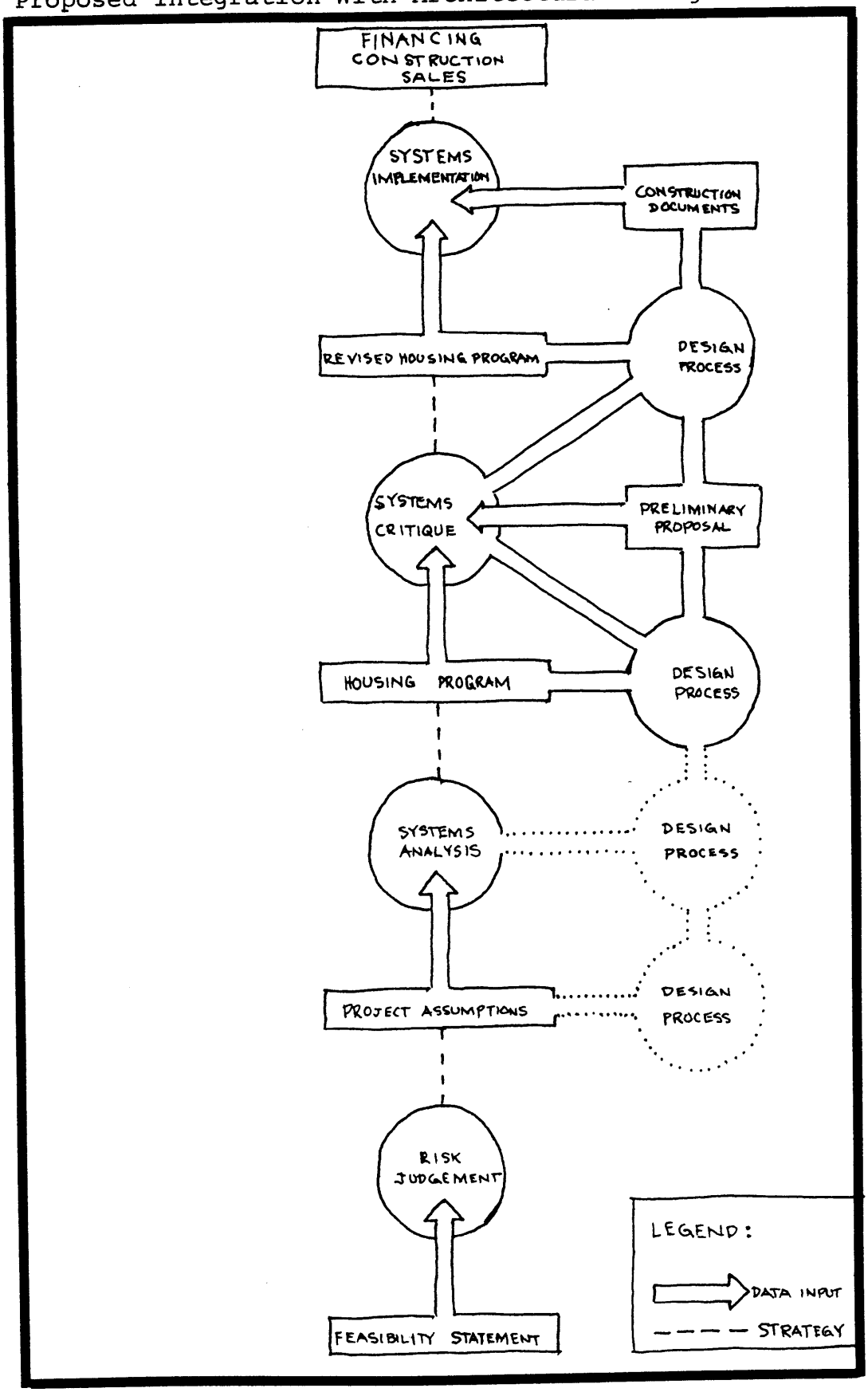


Figure IV-4.

--Increasing the architect's leverage within the design process of major development projects. This might be accomplished by designing survey instruments in the form of questionnaires which elicit qualititative judgements from the respondents on which specific user-needs programming could then be based. Using this data the builder could make more reasoned choices related to materials and costs which would reflect a rational balance between the cost and quality of the living environment.

--Increasing the architect's leverage outside of the design process of major development projects. The architect should strive to more effectively interface with the public whose needs his or her design must ultimately serve. He or she should elicit feedback from the public concerning environmental needs and channel that information into the development process in the form of the municipal planning board meeting, whose popular opinion would impact upon the developer's own perceptions and judgement. In addition, the architect should advocate a broadening of the legal definition of the condominium to embrace the notion of responsiveness of the physical support over time. This definition should provide the condominium owner with a program for change which outlines the rules within which physical growth and/or alteration would take place. This new definition would create a physical support for changes that are inherent in the evolution of the family.

The question that the architect is confronted with, finally, is whether housing needs will begin to respond to human needs, and whether these needs will be the paramount consideration in the design and construction of new residences.

How this question is answered will be determined only through the efforts of the architect and developer early in the development stage, at a point where input from the architect is still viable and can directly impact upon subsequent construction and design considerations.

It will no longer be sufficient for the architect to

exist in a conceptual vacuum, where his or her own efforts to program a comfortable and responsive living environment are countermanded and circumvented by preconceived development strategies. In order for new housing to begin to provide total enhancement of user-needs, in order for prospective residents to be able to choose from amenities which are designed to support as opposed to impress, in order for the development process to exist as a continuum in which the separate systems contributing to the process cooperatively interact in a symbiotic relationship, the architect must become a central role player in the initial planning of residential living space.

The home as place is fundamental as a notion in which the resident influences the living space as profoundly as the space will influence the resident. Only when housing design is created on the basis of user-oriented conceptions of space (as opposed to economy-oriented allocation of space and amenities) will the home once again stand as the principal retreat for human comfort. The child may leave the room, the floor, the home, the yard, and enter the world, but the home, first and last, will be the source and refuge of all human concern.

APPENDIX I

Condominium Development: The Economics of Feasibility

To provide a comprehensive example of a housing development feasibility study the following hypothetical case study will be used. The framework of this example appears in a project development case by R. J. Agiular of Louisiana State University, and presents the development of housing with two distinct housing markets in mind. Initially, the project was planned to be marketed as rental housng. In the fifth year, a decision was made to sell the individual units as condominiums. The planned conversion of rental housing to condominium housing in anticipating eventual conversion (and by providing for it archtecturally) differs from conversions of rental properties which were not originally designed to be developed as condominiums.

As an investment strategy, the structuring of equity capital investment through the syndication of limited partnerships by the general partner or developer is often best achieved with the development of multi-family rental housing. The decision to build rental housing is a strategy by which the developer will package a condominium project utilizing an outside investor's capital.

The use of long-term debt instrument, the mortgage, coupled with depreciation which is sold as tax shelter to limited partners in return for an equity capital infusion, allows the developer to enjoy a reasonable amount of control over the outcome of the project with a minimal investment of

capital from his or her own funds. As compensation for assembling and managing the development project, the developer charges a fee which is included as an expense in the feasibility study.

Many of the assumptions that are made in the following case study reflect the realities of real estate development. Issues of zoning, marketing research, environmental impact, density and unit mix, to name a few, evolve from many different legal, managerial, economic, and social realities which combine to "program" the outcome -- housing itself -- in many subtle ways.

THE CASE STUDY[1]

Planning Assumptions:

A. A properly zoned 3 acre tract of land with all available infrastructure can be acquired for $1.25 per square foot.

B. The units will be constructed of wood, panalized construction assembled at a factory and shipped to the site.

C. Utilities will be individually metered.

D. Parking areas will be open to the weather.

E. The units will be low rise townhouse apartments.

F. The following amenities will be provided:

1. Club house (5,500 s..f) with gym, sauna and steam room.

2. Two tennis courts.

3. One swimming pool for approximately every 80 units.

G. 20% of the land will be used for amenities and green areas.

H. 80% of the land (0.80 x 8 acres x 43,560 s.f./acre = 278,784 s.f.) will be left for building ground floor coverage and parking.

I. The average apartment ground floor area will be 1,000 s.f. ÷ 2.5 floors = 400 s.f. (Typical apartment is 1,000 s.f. in area and a typical bulding is 2 1/2 stories high.)

J. The average ground coverage for parking space per apartment will be 800 s.f. (Average of 2 1/2 parking spaces per unit, therefore, 2.5 parking spaces x 320 s.f. per parking space = 800 s.f.)

K. A typical unit has a total ground coverage of .400 s.f. + 800 s.f. = 1,200 s.f.

L. Consequently, the maximum number of apartments is given by 278,784 ÷ 1,200 s.f./unit = 232 units (approximately 29 units per acre).

M. The unit mix will be as follows:

TYPE	NUMBER	PERCENTAGE	AREA/UNIT	TOTAL AREA
1 bed, 1 bath-Flat	58 units	25%	700 s.f.	40,600 s.f.
2 bed, 1-1/2 bath-Flat	58 units	25%	900 s.f.	52,200 s.f.
2 bed, 2 bath-Townhouse	70 units	30%	1100 s.f.	77,000 s.f.
3 bed, 2 bath-Flat	46 units	20%	1200 s.f.	55,200 s.f.
TOTALS	232 units	100%		225,000 s.f.

(Average area per unit = 969.83 s.f.)

N. Therefore, the parking requirement will be:

1. Total Parking = 186 x 2 + 46 x 3 = 510 spaces.

2. Parking area = 510 spaces x 320 s.f./space = 163,200 s.f.

PROJECT SUMMARY

1. Total number of units = 232

2. Units per acre = 29

3. Ground coverage per unit = 225,000 s.f. ÷ 2.5 = 90,000 s.f.

4. Parking area = 510 spaces @ 320 s.f./space = 163,200 s.f.

5. Lot coverage or rentable space + parking = 253,200 s.f.

6. Lot area available for amenities and green spaces = 8 acres x 43,560 s.f./acre - 253,200 s.f. = 95,280 s.f.

7. Percentage of lot area available for amenities and green spaces = 27.34%

8. Club house with gym, sauna and steam room = 5,500 s.f.

9. Two tennis courts

10. Three swimming pools (one for each 77 units)

Mortgage

1. Gross Monthly Income (No utilities)

TYPE	NUMBER	MONTHLY RENT	TOTAL MONTHLY RENT
1 bed, 1 bath-Flat	58 units	$280	$16,240
2 bed, 1-1/2 bath-Flat	58 units	$360	$20,880
2 bed, 2 bath-Townhouse	70 units	$420	$29,400
3 bed, 2 bath-Flat	46 units	$480	$22,080
TOTALS	232 units		$88,600

Plus 5% Miscellaneous income (from coin op. mach.) = 4,430

Monthly Total = $93,030

2. Gross Annual Income ---------- $1,116,360
3. Less 6% Vacancy & Rent loss ---------- 66,982
4. Effective Gross Income ---------- $1,049,378
5. Less Operating Expenses (30% of E.G.I.) ---- 314,813
6. Net Income (Before Debt Service) ---------- $ 734,565
7. CAP RATE = (A P, 9-3/4%, 30) $100 -------- 10.39%
   (the cap rate is arbitrarily set equal to the debt service constant).
8. Value = $734,565 ÷ 0.1039 = $7,069,923, say $7,100,000
9. Loan (75% of value) = 0.75 x $7,100,000 = $5,323,000
10. Debt Service (A P, 9-3/4%, 30) $5,325,000 = $553,126
11. Net Cash Flow = $734,565 - $554,126 = $181,439

Summarize:

1. Project Value = $7,100.00.
2. Loan = $5,325,000.
3. Net Cash Flow = $181,439 per year.

Budget Structure

The budget structure will be broken down into hard costs (land, building construction, parking and landscaping) and soft costs (professional fees, promotion and advertising, and construction and rent up interest).

1. Hard Costs

a. Land - 8 acres x 43,560 s.f./acre x $1.25 s.f. = $435,600

b. Building construction

TYPE	NUMBER	AREA	COST/S.F.	TOTAL COST
1 bed, 1 bath-Flat	58 units	700 s.f.	$22.00/s.f.	$ 893,200
2 bed, 1-1/2 bath-Flat	58 units	900 s.f.	22.00/slfl	1,148,400
2 bed, 2 bath-Townhouse	70 units	1,100 s.f.	21.50 s.f.	1,655,500
3 bed, 2 bath-Flat	46 units	1,200 s.f.	21.00/s.f.	1,159,200
Club House	1 unit	5,500 s.f.	30.00/s.f.	165,000
Tennis Courts	2 units	---	22,000 each	44,000
Swimming Pools	3 units	---	20,000 each	50,000
		TOTAL BUILDING CONSTRUCTION		$5,175,300

c. Parking - 510 spaces x 320 s.f./space x $1.25/s.f. = 204,000

d. Landscaping - $200/unit x 232 units = 46,400

TOTAL HARD COSTS = $5,861,300

2. Soft Costs

a. Arch./Eng./Plann. Fees (5% of const. + parking + landsc.) = $275,285

b. Financing Fees (3% of Mortgage) = $159,750

c. Legal and Title Insurance (2% of Mortgage) = $106,500

d. Developer Fees (1% of Mortgage) = $ 53,250

e. Promotion and Advertising (1% of Mortgage) = $ 53,250

f. Miscellaneous and Contingencies (3% of Mortgage) = $159,750

g. Construction and lease up period interest,
12% - 2 yeers construction, no lease up period
(completion of construction in stages permits grudual leasing of units).
= [0.12(922,000 x 2) + 0.12(4,403,000 x 2)1/2] (1 + 0.12 x 2 x 1/2)

= $ 839,597

h. TOTAL SOFT COSTS = $1,647,382

The first draw of $922,000 consists of land = 80% of Arch./Eng./Planning + 50% of financing + 50% of legal & title + 50% of miscellaneous & contingencies, rounded off to the nearest $1,000.

3. Total Budget = $5,861,300 + $1,647,382 = $7,508,682, say $7,500,000 or $33.33/s.f. or rentable area.

Because the loan amount is $5,325,000, there is a budget deficit or shortfall.

4. Shortfall = $7,500,000 - $5,325,000 = $2,175,000 or 29% of the budget. If an 8% rate of inflation is envisioned for each of the 5 years following rent up, the net income at the end of this period would have to:

Projected Net Income = (F P, 8%, 5) $734,565 = $1,079.317.

Thus, the Net Cash Flow would be:

Projected Net Cash Flow = $1,079,317 - $553,126 = $526,191

as the Debt Service would remain constant during the same period. Averaging the Net Cash Flow over the 5 year period immediately following rent up, one obtains:

Average Net Cash Flow = 1/2(181,439 + 526,191) = $353,815.

Assume that the Limited Partners will earn a 12% preferred, non-cummulative return on investment, then, the capitalized value of the average net cash flow is $353,815 ÷ 0.12 = $2,948,458. (The 12% return is high to compensate for the averaging of future net cash flows).

The shortfall of $2,175,000 represents 73.76%, say 75% of the average net cash flow. Based on this premise a Limited Partnership can be structured as follows

Equity Capital Structure

1. The Limited Partners are in the 50% tax bracket.

2. The Limited Partners contribute $2,175,000 to the partnership in consideration of the following allocation:

   a. Equity - Limited Partners receive 75% of the net proceeds from a sale or refinancing, with first out privileges; thereafter, the net proceeds are split 75/25 between the Limited Partners and the General Partners.

   b. Cash Flow - Limited Partners earn 12% ($261,000) preferred, non-cumulative return, thereafter the balance of the net cash flow is split 75/25 between the Limited Partners and the General Partners.

   c. Depreciation and Write offs - 75% to the Limited Partners; 25% to the General Partners.

3. Building Depreciation - Double Declining Balance, 35 year economic life. Initial Depreciable Book Value = $7,500,000 (total budget) - $435,600 (land) = $7,064,400.

4. Assume that the complex will be converted into a condominium and sold as individual units at the end of year 5 followig rent up (end of year 7 from start of project).

Table 1. - Depreciation Schedule (Double Declining Balance)

1. Annual Depreciation = 200%/35 years = 5.71%

2. Depreciation starts at the end of the construction period.

YEAR	BOOK VALUE AT START	DEPRECIATION	BOOK VALUE AT END
1	7,064,400	403,680	6,660,720
2	6,660,720	380,613	6,280,107
3	6,280,107	358,863	5,921,244
4	5,921,244	338,357	5,582,887
5	5,582,887	319,022	5,263,865

The book value at the end of year 5 for straight line (uniform) depreciation is:

$$\frac{30}{35} \times 7,064,400 = \$6,055,200.$$

According to the Tax Reform Act of 1976, the difference between accelerated and uniform depreciation is subject to ordinary income tax when a sale takes place. Thus,

Subject to ordinary income tax = $791,335.

Table 2. - Mortgage Balance

YEAR	BALANCE AT START	DEBT SERVICE	INTEREST	REDUCTION	BALANCE AT END
1	5,325,000	553,126	519,188	33,939	5,291,062
2	5,291,062	553,126	515,878	37,248	5,253,814
3	5,253,814	553,126	512,247	40,879	5,212,935
4	5,212,935	553,126	508,216	44,865	5,168,070
5	5,168,070	553,126	503,887	49,239	5,118,831

Table 3. - Net Cash Flow from Project - 8% inflation

YEAR	NET INCOME	DEBT SERVICE	NET CASH FLOW
0	734,565	553,126	181,439
1	793,330	553,126	240,204
2	856,797	553,126	303,671
3	925,340	553,126	372,214
4	999,368	553,126	446,242
5	1,079,317	553,126	526,191

TYPE	FUTURE SALES PRICE	NUMBER OF UNITS	GROSS INCOME
1 bed, 1 bath-Flat	$46,284	58	$ 2,684,472
2 bed, 1-1/2 bath-Flat	$56,863	58	3,298,054
2 bed, 2 bath-Townhouse	69,499	70	4,864,930
3 bed, 2 bath-Flat	74,054	46	3,406,484
		Total Gross Income =	$14,253,940
		Less 6% cost of Sales =	855,236
		Gross Profit =	$13,398,704

A Home Owners Association must be set up to manage the common areas to establish operating expenses and contributions, etc. Also, the existing mortgage must be paid off either with a new interim loan or by arranging with the morgagee partial releases of units as the sales are closed. The net proceeds from the condominium sales program are computed as follows:

1.	Gross Profit from sales	= $13,398,704
2.	Less conversion costs (5%) (construction improvements)	= 669,935
3.	Less Legal Costs (1%)	= 133,987
4.	Less Mortgage Balance	= 5,118,831 (from Table 2)
5.	Less 5% prepayment penalty (of mortgage balance)	= 255,942
	Net Proceeds from Sales	= $ 7,220,309

Table 4. - After Tax Net Cash Flow to Limited Partners (75% Allocation)

(1) YEAR	(2)-(Table 3) PROJECT INCOME	(3)=0.75 x (Table 2) PRINCIPAL REDUCTION	(4)=0.75x(Table 1) DEPRECIATION
1	240,204	25,454	(302,760)
2	293,003	27,936	(285,460)
3	344,411	30,659	(269,147)
4	399,932	33,649	(253,768)
5	459,893	36,929	(239,267)

(5)=(2)+(3)+(4) TAXABLE INCOME	(6)=-0.50x(5) TAX REBATE	(7)=(2)+(6) AFTER TAX NET CASH FLOW
(37,102)	18,551	258,755
35,479	(17,740)	275,263
105,923	(52,962)	291,449
179,813	(89,907)	310,025
257,555	(138,778)	331,115

*293,003 = [303.671 (table 3) - 261,000] 0.75 + 261,000 = 0.12 x 2,175,000 similarly for other values in this column (years 3, 4, and 5).

CONDOMINIUM CONVERSION - RENTAL TO SALE

TYPE	SALES PRICE AREA	TOTAL s.f.	QUALIFYING SALES PRICE	INCOME
1 bed, 1 bath-Flat	700 s.f.	$45.00/s.f.	$31,500	$1,200/mth
2 bed, 1-1/2 bath Flat	900 s.f.	43.00/s.f.	38,700	1,600/mth
2 bed, 2 bath Towhhouse	1,100 s.f.	43.00/s.f.	47,400	1,800/mth
3 bed, 2 bath-Flat	1,200 s.f.	42.00/s.f.	50,400	1,900/mth

The qualifying income column is the minimum family gross monthly income that would qualify a purchaser for financing of each unit. It is computed by assuming that the family gross monthly income should be five times the monthly debt service, using 90% financing at 9-1/2% with a 30 year term. The Gross Profit from the sale of the condominiums 5 years after the end of construction is computed as follows ((8% inflation for 5 years).

After Tax Net Proceeds to Limited Partners

The Before Tax net proceeds to the Limited Partners consist of $2,175,000 first out on their capital contribution, plus 75% of the balance. Thus,

Before Tax Net Proceeds to Limited Partners =

$$2,175,000+ 0.75 (7,220,309 - 2,175,000) = \$5,958,982.$$

During the 5 year period the Limited Partners took $1,350,402 of accelerated deprecition (from Table 4). However, if they had taken their proportional share of straight line depreciation, the write off would have been:

$$0.75 [7,064,400 - 6,055,200] = \$756,900.$$

Thus, the difference,

$$\$1,350,402 - \$756,900 = \$593,502$$

is subject to recapture (taxed as ordinary income) and the balance is subject to capital gains tax.

Summarizing, the Limited Partners will be taxed on the net proceeds, as follows:

1. Total Gain = \$5,958,982 = 1,350,402 - \$2,175,000 = \$5,134,384

2. Subject to recapture = \$593,502

3. Capital Gain = \$5,134,384 - \$593,502 = \$4,540,882

Assuming the maximum rates of 70% tax on the captured portion of the income, and 28% tax on the Capital Gains (including the consideration of tax-preference items as per the Tax Reform Act of 1976), the Limited Partners will realize the following after tax net proceeds from the condominium sales:

1. Before Tax Net Proceeds = \$5,958,982

2. Less Tax on Income Subject Recapture = 0.70 x \$593,502 = 415,451

3. Less Tax on Income Subject to Capital Gains Tax = 0.28 x \$4,540,882 = 1,271,447

Total After Tax Net Proceeds = \$4,272,084

	YEAR	NET CASH FLOW	P.W. (20.31%)
Construction Period	0	- 435,000	- 435,000
	1	- 870,000	- 723,132
	2	- 870,000	- 601,057
Rental Period	3	+ 258,755	+ 148,588
	4	+ 275,263	+ 131,384
	5	+ 291,449	+ 115,626
	6	+ 310,025	+ 102,232
	*7	+ 4,603,199	+ 1,261,675
		+ 3,563,691	+ 316 (round off)

*Net Cash Flow at year seven =

$$\$331,115 \text{ (from Table 4)} + \$4,272,084 = \$4,603,199.$$

The After Tax True Rate of Return to the Limited Partners is 20.31%. This figure is checked by computing the Present Worth of the Net Cash Flow at 20.31% and verifying it to be zero (+ $316 due to round off).

NOTES

Introduction

[1]HUD Condominium/Cooperative Study, Vol. 1 (Washington, D.C.: U.S. Department of Housing and Urban Development, 1975), pp. IV-27. [All subsequent references to this volume will be cited within the text with page numbers only.]

[2]Quotations from developers were drawn from a series of interviews by the author. At the request of those interviewed, names have been omitted herein. Subsequent citations will appear as "Confidential Interview."

Chapter I

[1]Clare Cooper, The House as a Symbol of Self (Berkeley, Calif.: University of California Institute of Urban and Regional Development, 1971), p. 46.

[2]A complete discussion of this concept can be found in Gaston Bachelard, The Poetics of Space (Boston: Beacon Press, 1969).

[3]Cooper, pp. 34-35.

[4]Mayer Spivak, "Architectural Place," Architectural Forum (October 1973), pp. 44-49.

[5]Ibid., p. 45.

[6]Ibid., p. 47.

[7]Ibid., p. 49.

[8]Ibid., p. 46.

[9]Confidential Interview.

[10]Bachelard, pp. 14-15.

[11]Spivak, p. 46.

Chapter II

[1]Bernard J. Frieden, The Environmental Protection Hustle (Cambridge, Mass.: The Massachusetts Institute of Technology Press, 1979).

[2]Carl Norcross, Townhouses and Condominiums: Resident's Likes and Dislikes (Washington, D.C.: Urban Land Institute, 1973), p. 86.

Chapter III

[1]Confidential Interview.

[2]Keith B. Romney, Condominium Development Guide: Procedures, Analysis, Form (Boston: Warren, Gorham and Lamont, 1974), pp. 2-21 - 2-22.

[3]Confidential Interview.

[4]Romney, pp. 2-16 - 2-18.

[5]Natalie Gerardi, "What Home Shoppers Seek in Six Major Markets," Housing (October 1978), pp. 64-66.

[6]Joel G. Cahn, "How to Bring the Charm of the City to the Suburb," Housing (April 1979), p. 73.

[7]Joel G. Cahn, "Multi-Family in Victorian Grab: An In-City Project Surprises Outside and In," Housing (March 1979), p. 70.

[8]Confidential Interview.

[9]Confidential Interview.

Chapter IV

[1]Clare Cooper, Analysis of the Design Process At Two Moderate-Income Housing Developments (Berkeley, Calif.: University of California Institute of Urban and Regional Development, 1968), p. 83.

[2]Ibid., p. 82.

[3]Ibid., p. 85.

[4]June R. Vollman, "Systemizing Custom Design," Housing (March 1979), pp. 82-85.

[5]Joel G. Cahn, "Single Family Privacy at Multi-Famliy Density," Housing (April 1979), p. 58.

[6]Cooper, Analysis of the Design Process at Two Moderate-Income Housing Developments, p. 86.

Appendix

[1]Rudolph J. Aguilar, Housing: A Project Development Case Study for Students of Architecture (Baton Rouge: Louisiana State University, undated).

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