JAMES A. GRAASKAMP COLLECTION OF TEACHING MATERIALS

V. INDUSTRY SEMINARS AND SPEECHES - SHORT TERM

A. Appraisal Organizations

13. 1983

c. "Real Estate Feasibility Analysis Seminar", sponsored by Denver Chapter AIREA, September 16-17, 1983

Index

SEMINAR
REAL ESTATE FEASIBILITY ANALYSIS

Presented By:

Professor James A. Graaskamp, CRE, SREA
University of Wisconsin, School of Business

For

Denver Chapter
American Institute of Real Estate Appraisers

September 16-17, 1983

REAL ESTATE FEASIBILITY SEMINAR

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I. Basic Concepts and Definitions

A. Real estate is a tangible product - defined as artificially delineated space with a fourth dimension of time referenced to a fixed point on the face of the earth.

1. Real estate is a space-time unit, room per night, apartment per month, square foot per year, tennis court hours, or a condominium for two weeks in January at a ski slope.
2. To the space-time abstraction can be added special attributes to house some form of activity.
3. Improvements from survey market to city layouts to structures define space.
4. Legal contracts and precedents define time.
5. Rights of use are defined by public values, court opinions.
6. Private rights to use are those which remain after the public has exercised its rights to control, to tax, or to condemn.

B. A real estate project is cash cycle business enterprise which combines a space-time product with certain types of management services to meet the needs of a specific user. It is the process of converting space-time needs to money-time dimensions in a cash economy.

1. A real estate business is any business which provides expertise necessary to relate space-time need to money-time requirements and inclues architects, brokers, city planners, mortgage bankers, and all other special skills.
2. The true profit centers in real estate are in the delivery of services and cash capital. Money is an energy transfer system.
3. Equity ownership is the degree to which one enterprise controls or diverts cash from another real estate enterprise.
4. Public has direct ownership to the degree real estate taxes take a percentage of tenant income in excess of service cost.
5. Consumer must view space as a total consumption system involving direct cost, surface cost, transportation cost and negative income of risk.
6. The best real estate project is the one which has the lowest net present value of cost as the sum of cost to the consumer production sector and public sector.

C. The real estate process is the dynamic interaction of three groups, space users (consumers), space producers, and the various public agencies (infrastructures) which provide services and capital to support the consumer needs. (See Exhibit 1)

1. Each of these three decision groups represent an enterprise, an organized undertaking. All are cash cycle enterprises constrained by a need for cash solvency, both short and long term.
2. A desirable real estate solution occurs when the process permits maximum satisfaction to the consumer at a price that he can afford within the environmental limits of land while permitting the consumer, producer, and the government cash cycle to achieve solvency - cash break even at a minimum, after full payment for services rendered.
3. Solvency of the total process, not value, is the critical issue.
4. Land is an environmental constraint and not a profit center.
5. Land provides access to a real estate business opportunity and is not the opportunity itself. Real estate business wants to control land to create a captive market for services.

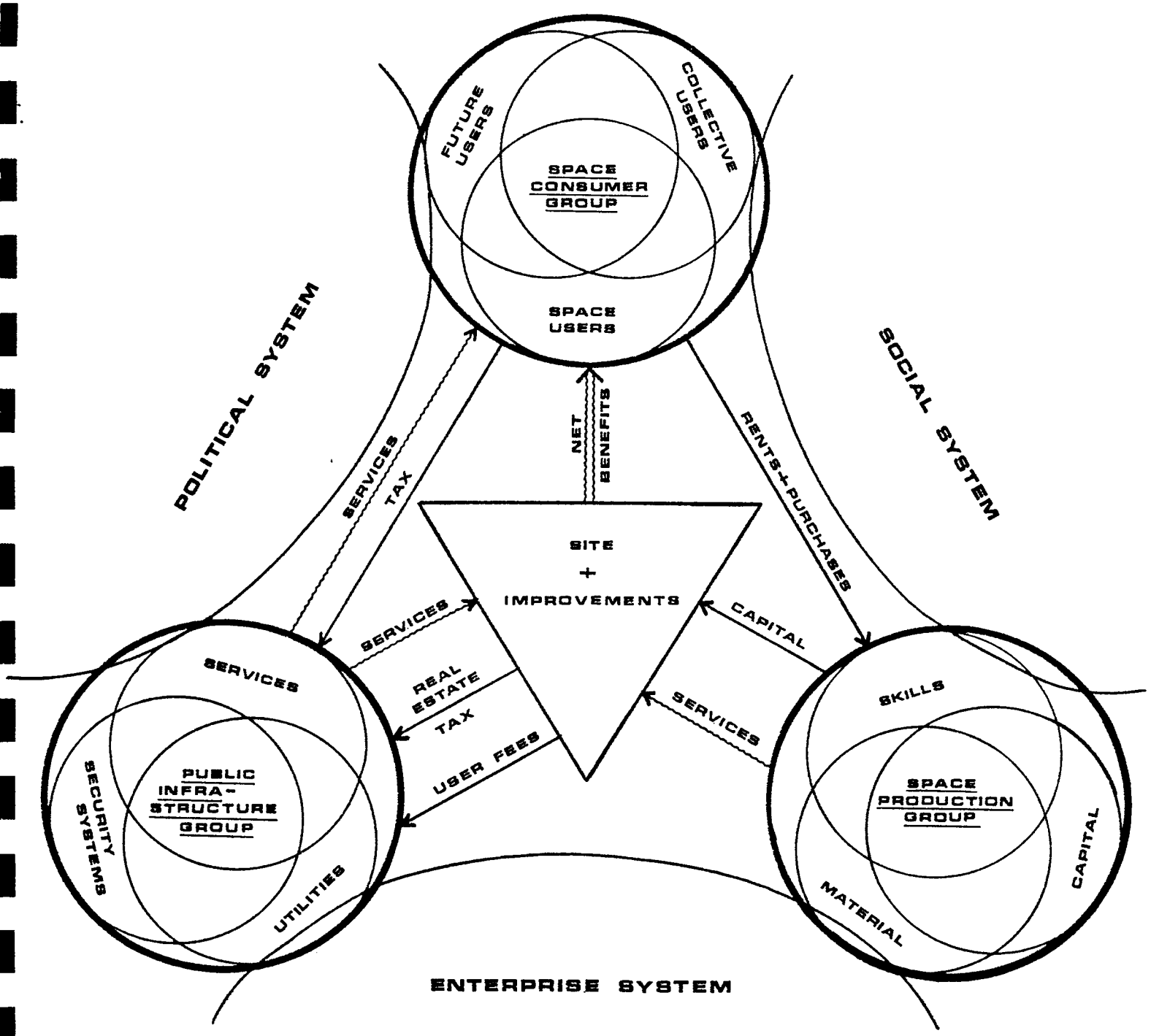
D. Land is the point where demand and supply forces find cash solvency. Location is a manufactured attribute. Site attributes are exploited to reduce outlays and to increase receipts and include:

1. Physical attributes
2. Legal-political attributes
3. Linkage attributes
4. Dynamic attributes
5. Environmental attributes

E. Recognition of the fact that profit maximization must be limited by concerns for physical environment and community priorities for land use has resulted in redefinition of the most basic concept in appraisal; i.e. highest and best use, in the authorized terminology handbook sponsored by the American Institute of Real Estate Appraisers and the Society of Real Estate Appraisers. Compare the 1971 definition with that for 1975:

> Highest and best use concept-
> "A valuation concept that can be applied to either the land or improvements. It normally is used to mean that use of a parcel of land (without regard to any improvements upon it) that will maximize the owner's wealth by being the most profitable use of the land. The concept of highest and best use can also be applied to a property which has some improvements upon it that have a remaining economic life. In this context, highest and best use can refer to that use of the existing improvements which is most profitable to the owner. It is possible to have two different highest and best uses for the same property: one for the land ignoring the improvements; and another that recognizes the presence of the improvements.:
> p. 57, Real Estate Appraisal Principles and Terminology, Second Edition, Society of Real Estate Appraisers 1971.

Exhibit 1



THE REAL ESTATE PROCESS

"Highest and Best Use: That reasonable and probable use that will support the highest present value, as defined, as of the effective date of the appraisal. Alternatively, that use, from among reasonably probable and legal alternative uses, found to be physically possible, appropriately supported, financially feasible, and which results in highest land value. The definition immediately above applies specifically to the highest and best use of land. It is to be recognized that in cases where a site has existing improvements on it, the highest and best use may very well be determined to be different from the existing use. The existing use will continue, however, unless and until land value in its highest and best use exceeds the total value of the property in its existing use. Implied within these definitions is recognition of the contribution of that specific use to community environment or to community development goals in addition to wealth maximization of individual property owners. Also implied is that the determination of highest and best use results from the appraisers judgement and analytical skill, i.e., that the determined from analysis represents an opinion, not a fact to be found. In appraisal practice, the concept of highest and best use represents the premise upon which value is based. In the context of most probable selling price (market value) another appropriate term to reflect highest and best use would be most probable use. In the context of investment value an alternative term would be most profitable use."
Real Estate Appraisal Terminology, Edited by Byrl N. Boyce, Ph.D. SRPA, Ballinger Publishing Co., Cambridge, Mass. 1975

F. The purchase of a piece of real estate today involves the acceptance of a great many assumptions about the future. Those who take care to validate these assumptions in a period of transition as to public land use control tend to have the most successful investment.

1. Business decisions today make explicit recognition of their assumptions and the need to act under conditions of uncertainty.
2. Business risk is the difference between assumptions about the future and realizations, the proforma budget and the end of the year income statement.
3. Risk management is the control of variance between key assumptions and realizations.
4. An appraisal is a set of assumptions about the future productivity of a property under conditions of uncertainty.

G. The concept of highest and best use of land was a commodity concept which did not consider externalities adequately. It is being replaced be concepts of most fitting use and the concept of most probable use.

1. The most fitting use is that use which is the optimal reconciliation of effective consumer demand, the cost of production, and the fiscal and environmental impact on third parties.
2. Reconciliation involves financial impact analysis on "who pays" and "who benefits" - thus the rash of debate on how to do impact studies.

3. The most probable use will be something less than the most fitting use depending on topical constraints imposed by current political factors, the state of real estate technology, and short term solvency pressures on consumer, producer, or public agency.
4. Most probable use means that an appraisal is first a feasibility study of alternative uses for a site in search of a user, an investor, and in need of public consent.

H. In seeking the most fitting and most probable use, the inner city planner and private property appraiser must interact to determine how community objectives and consumer - production sector solvency can be achieved simultaneously.

1. A real estate decision has only two basic forms. Either a site is in search of a use and consumer with the ability to pay, or a consumer, need or use with a defined ability to pay is seeking some combination of space-time attributes he can afford.
2. The individual consumer with needs and a budget is the drive wheel.
3. The public sector represents the community owned consumer service delivery system, seeking to minimize marginal cost to the consumer and average cost to the community at large.
4. The production sector responds to a derivative demand for engineering and management expertise.

I. Critiquing the form and adequacy of a real estate solution is analogous to the artistic concept of judging the success of an art object by relating form of the solution to the context to which it was created.

1. Context includes those elements which are fixed, given, or objectives and to which any solution must adapt.
2. Form giving elements are those variables within the artists control, i.e. options or alternatives at a particular time.
3. A solution is judged for its correctness or success in terms of the degree of fit of the form proposed to the context.
4. Feasibility analysis is concerned with the degree of fit or the extent of misfit between a proposed course of action and the context within which it must operate or fit.
5. Success therefore depends on how appropriately the problem is defined; testing feasibility depends primarily upon accurate and comprehensive definition of the context.

J. An enterprise is any organized undertaking, and a real estate problem or project always begins from the viewpoint of some enterprise relative to its environment.

1. The systems engineer sees the eventual form of an enterprise, in terms of both its configuration and behavior, as representing a negotiated consensus between two general sources of power--the power of the environment to dictate form and behavior of the organization on one hand and the power of the organization to decide for itself what its characteristics and behavior will be on the other.

2. The system engineer uses "power of the environment" as a dynamic alternative to the static implications of context and adds dynamic element of behavior to the elective responses of the form giver.

II. Feasibility Analysis

A. The concept of feasibility is elusive and much abused. Combining the systems concept of enterprise under conditions of uncertainty and the physical design concept of fit leads to the following definition:

> "A real estate project is 'feasible' when the real estate analyst determines that there is a reasonable likelihood of satisfying explicit objectives when a selected course of action is tested for fit to a context of specific constraints and limited resources."

B. The problem of defining objectives and measuring success depends almost entirely on correctly defining the problem and values of the client.

1. The nature of a decision process must be made explicit.
2. Defining a problem in terms of inherent characteristics must be addressed today.
3. The nature of risk and risk management must be made explicit because the definition implies uncertainty by means of a subjective probability, "reasonable likelihood of succeeding."
4. There is a need to identify and measure and weight elements of success.
5. There is a need to identify and dimension the limited resources of the client in terms of personnel, expertise, cash, and time for commitment and completion.
6. Definition of decision process and problem lead to proper description of work project for the analyst.

C. The general theory of the management process for any enterprise can be converted to real estate semantics for feasibility:

Values, objectives, policy	Strategic format
Search for opportunity alternatives	Market trend analysis
Selection of an opportunity	Merchandising target with monopoly character
Program to capture opportunity	Legal-political constraints Ethical-aesthetic constraints Physical-technical constraints Financial constraints
Construction of program	Project development
Operation of program	Property management
Monitoring and feedback	Real estate research

D. These basic elements and definitions then lead to a correct title for the report required. Most feasibility reports go wrong on the title page because the analyst did not clearly understand to which elements of context and form his report was to be addressed. Seldom does the analyst do a complete feasibility study as a single report on his own . Components may be provided by others and the sequence of set may differ in each case depending on how the consultant understands the client. Therefore, a report should be entitled as one of the following:

1. Strategy study: selection of objectives, tactics, and decision criteria.
2. Market analysis: economic base studies or other related aggregate data review.

3. Merchandising studies: consumer surveys, competitive property analusis, marketability evaluation, etc.
4. Legal studies: opinion on potential legal constraints, model contracts or forms of organization, and political briefs.
5. Architectural and engineering studies: alternative building envelopes, structural solutions, and net usable space and space relationships, together with technical resolutions of problems in the physical context adequate for budgeting and marketing work.
6. Compatibility studies: project impact on various groups affected in terms of their attitudes, expectations and vested interests in the status quo and community goals.
7. Financial studies: cash flow budgets, potential risk and sensitivity analysis, fiscal impact analysis, and alternative sources of capital, tax implications, etc.

E. Feasibility analysis is a sub-topic within the generally expanding liturature of problem solving. Any Counselor or problem solver is urged to read the following:

1. The Art of Problem Solving, Russell L. Ackoff, John Wiley & Sons, New York, 1978
2. The Complete Problem Solver, John R. Hayes, The Franklin Institute Press, Philadelphia, 1981
3. Strategic Planning in Emerging Companies, Steven C. Brandt, Addison-Wesley Publishing Company, 1981

Ackoff subdivides any problem into five types of components:

1. The decision maker--the person or persons faced with the problem, as a group or individual.

2. The controllable variables--those aspects of the problem situation the decision maker can control.

3. The uncontrolled variables--those aspects of the problem situation the decison maker cannot control but those which, together with the controlled variables can effect the outcome of his choice. The uncontrolled variables may be quantitative or qualitative, but together they define the problem environment, in the language of Ackoff, or the context in the language of Christopher Alexander.

4. Constraints imposed from within or without on the values of the controlled and uncontrolled variables. For example, the consumer places a limit on how much he is willing to pay for rent, although rent levels themselves are often set by cost factors byond his control.

5. The possible outcomes produced jointly by the decision makers choice and the uncontrolled variable.

Ackoff further refines problem solving:

> A problem is said to be solved when the decision maker selects those values of the controlled variables which maximize the value of the outcome; that is, when he has optimized. If he selects values of the controlled variables that do not maximize the value of the outcome but produce an outcome that is good enough, he has resolved the problem by satisficing. There is a third possibility: he may dissolve the problem. This is accomplished by changing his values so that the choices available are no longer menaingful. For example, the problem of selecting a new car may be dissolved by deciding that the use of public transportation is better than driving oneself. It may also be dissolved by moving to within walking distance from work so that driving is no longer required. We use "solving" loosely to cover all three alternatives.

Ackoff also points that many problem solvers are reactive responding to the immediate irritation which leads us "to walk into the future facing the past - we move away from, rather than toward something. This often results in unforseen consequences that are more distasteful than the dificiencies removed." Recall D.D.T. Problem should be proactive by specifying the ideal outcome and looking for ways to move in that direction. "The chances of overlooking relevant consequences are minimized when we formulate a problem in terms of approaching ideals ... focusing on an ideal reveals the relationships between things that can be done in the future and tends to make us feel simultaneously with sets of interacting threats and opportunities, to treat them as a whole, as a system of problems.

From that it is important to learn that:
Planning is dealing with sets of interacting problems
Problem solving is finding alternative routes to approach an ideal solution
Feasibility analysis is testing a specified course of action for its liklihood of fulfilling the ideal
An appraisal is a ficticious feasibility study in which human behavior is assumed to be normative

F. The Hayes text is a rich collection of problem solving and decision making methods. Hayes believes that problems should be represented with doodles, flow charts, simple diagrams, or other graphics. He sees the problem solving process as correctly representing the goal, correctly specifying the initial state of affairs, correctly specifying the differences between the current state of affairs and the goal, the restrictions in moving toward the goal and operators available to advance affairs to the goal. He defines decision technique for conditions of certainty, uncertainty, or competitive conflict Hayes develops for strategic viewpoints:

1. The minimax strategy which assumes that "nature is against us" so that the ob ject is to choose the strategy that will minimize the disaster, although it has the unfortunate property that may also eliminate the best possible outcome.

2. The maxi-max strategy chooses the course of action which could provide the best of the best possible outcomes, but it does not defend you against the possibility of enjoying the worst possible outcome.

3. The Hurwitz strategy allows a compromise between the pessimistic and the very optimistic strategies above while allowing one to modify the probabilities with a factor for the level of optimism or pessimism of the decision maker.

4. Minimizing maximum regret strategy may be most significant for real estate investors as in phasing the project or buying standby credit at an exhorbitant rate.

Hayes describes four general types of decisions which require different decision procedures; decisions under certainty, under risk, under uncertainty and under conflict. In the case of certainty the facts are known and static, and it is only necessary to rank in terms of desirability. Consider four student apartments as described in Exhibit 2. Hayes demonstrates five different methods which may be useful for making decisions under certainty:

1. Dominance which determines that one alternative dominates if it is at least as good as the other properties and is better in one attribute on at least one property. (Exhibit 3.)
2. The lexicographic method which ranks like a dictionary specifying the most important attributes first and then resolving ties in ranking by going to the second most important attribute second. The weakness is that the selection process ignores all but the most important attributes so that the selection may have serious unattractive secondary attributes.
3. Additive weighting takes all attributes into account but gives them different weights depending on value systems of observer. It does not recognize interactions of attributes so it can lead to inappropriate decisions by ignoring interactions just as lexicographics ignore minor attributes. (Exhibit 4.)
4. Effectiveness indices take into account interactions, such as the profitability index which takes present value of premises relative to total capital budget.
5. Satisficing approach requires the decision maker to identify the minimum value he is willing to accept for each of the attributes, rejecting alternatives which fail the test and accepting the first alternative which meets all the minimal values tests. (For example, a building with a debt cover ratio no less than 1.2, a cash on cash yield of 9%, leasable area no less than 60,000 square feet in an office building no more than five years old with one parking stall per 300 square feet of G.L.A.) (Exhibit 5.)

Summary of systems in Exhibit 6.

Success may be measured by any of the above systems with lists of attributes selected by the analyst as relevant tests of alternative courses of action, such as: (See Exhibit 7.)

1. A check list of physical attributes.
2. A check list of critical linkage attributes.
3. A check list of dynamic behavioral attributes.
4. A check list of attributes or services (given weighted point scores)
5. Financial ratios measuring risk, such as cash break-even, rate of capital recapture, loan ratios or sensitivity to specified contingencies.
6. Probability distributions of alternative outcomes and standard error
7. Psychological gratifications.
8. Specified legal attributes.
9. Measures of impact on environment.

Database management on personal computers will require that you learn to use decision rules dealing with certainty, uncertainty, conflict, and difference by understanding the advantages and disadvantages of each rule.

EXHIBIT 2

Student Apartments

A1			
brightness:	always needs artificial lighting	size of rooms:	cramped
cleanliness:	needs vacuuming	noise level:	usually quiet
kitchen:	new stove, sink, and refrigerator	general repairs:	needs no repairs
noise level:	frequently noisy	brightness:	very bright throughout the day
size of rooms:	average	cleanliness:	needs vacuuming
general repair:	needs no repairs	landlord attitude:	cordial
distance from place of employment:	15 minutes	distance from place of employment:	60 minutes
landlord attitude:	indifferent	kitchen:	stove, sink, and refrigerator in good condition

A3			
distance from place of employment:	20 minutes	general repair:	needs no repairs
brightness:	fairly bright	brightness:	very bright
landlord attitude:	very friendly	noise level:	often quiet
cleanliness:	ready to move in	size of rooms:	small
kitchen	stove, sink, & refrigerator, old but useable	distance from place of employment:	45 minutes
noise level:	sometimes noisy	kitchen:	stove & refrigerator in good condition
general repair:	needs one week repair work	landlord attitude:	cordial
size of rooms:	comfortable	cleanliness:	ready to move in

EXHIBIT 3

Alternatives

	1	2	3	4
Distance in Minutes	15 Min	60 Min	20 Min	45 Min
Size of Rooms	Average	Cramped	Comfortable	Small
Kitchen	New stove, etc.	Stove, etc. in good condition	Stove, etc. old but useable	Stove, etc. in good condition
General Repair	Needs no Repair	Needs no Repair	Needs one Week work	Needs no Repair
Cleanliness	Needs Vacuuming	Needs Vacuuming	Ready to Move in	Ready to Move in
Noise Level	Frequently Noisy	Often Quiet	Sometimes Noisy	Often Quiet
Brightness	Always needs artificial light	Very Bright	Fairly Bright	Very Bright
Landlord	Indifferent	Cordial	Very Friendly	Cordial

Only one alternative dominates another in this problem: Alternative 4 dominates Alternative 2. Alternative 4 is as good as Alternative 2 in "kitchen," "general repair," "noise level," "brightness," and "landlord," and it is better in "distance," "size," and "cleanliness." Alternative 1 does not dominate Alternative 2 because, while it is better in some properties, such as "distance," it is worse in others.

EXHIBIT 4

Alternative Apartments

	1	2	3	4	Weight
Distance in Minutes	15 Min (4)	60 Min (1)	20 Min (3)	45 Min (2)	7
	28	7	21	14	
Size of Rooms	Average (3)	Cramped (1)	Comfortable(4)	Small (2)	4
	12	4	16	8	
Kitchen	New stove, etc. (5)	Stove, etc. in good condition (4)	Stove, etc. old but useable (3)	Stove,etc. in good condition (4)	3
	15	12	9	12	
General Repair	Needs no Repair (5)	Needs no Repair (5)	Needs one Week work (2)	Needs no Repair (5)	2
	10	10	4	10	
Cleanliness	Needs Vacuuming (4)	Needs Vacuuming (4)	Ready to Move in (5)	Ready to Move in (5)	1
	4	4	5	5	
Noise Level	Frequently Noisy (2)	Often quiet (4)	Sometimes Noisy (3)	Often quiet (4)	1
	2	4	3	4	
Brightness	Always needs artificial light (1)	Very bright (5)	Fairly Bright (3)	Very Bright (5)	1
	1	5	3	5	
Landlord	Indifferent(3)	Cordial (5)	Very Friendly (4)	Cordial (5)	1
	3	5	4	5	
Sum of Value X Weight	75	51	65	63	

EXHIBIT 6

Decision Making Methods

Method	Type	Use this method	Cost of computation required	Number of alternatives examined
Dominance	Optimizing	for preliminary screening of alternatives	low	all
Lexicography	Optimizing	when attributes are very different in weight	very low	all
Additive Weighting	Optimizing	when it is important to find the best alternative	high	all
Effectiveness Index	Optimizing	when it is very important to get best alternative	very high	all
Satisficing	Non-optimizing	when the cost of examining the whole set of alternatives is very high	very low	some

IV. Problem Perceived By the Client

The original problem as perceived by the client is generally ill-defined or misdirected as the problem becomes understood by the analyst.

A. There are several reasons for the shift in perception by both parties, such as:

1. Implicit assumptions by the client as to the services offered by a real estate appraiser,
2. Implicit assumptions and poor sequencing in the decision process,
3. The bias of viewpoint, because everyone is an expert on real estate,
4. A bias introduced by training, previous experience, or peer group controlling the client.

B. The consultant must begin by attempting to discover the sequence or protocol of decision which have brought the client to that point to discover what has been taken for granted, what has been overlooked, and what will be needed.

C. Education can't provide the tools for this critical initial step in the relationship between counselor and client. Ackhoff pointed out that educators generally produce only competence, communicativeness, and concern while the characteristics that makes for outstanding managers are courage and creativity. Hayes goes on to define creativity as "A special kind of problem solving, that is the act of solving an ill-defined problem. Ill-defined problems are those which require problem solvers to contribute to the definition of the problem from their own resources."

D. The consultant must structure the initial interview and subsequent intermediate report sessions to ask the client explicitly about the following:

1. His concept as to the "essence" of his business
2. His preferred method of meeting entrepreneurial risk
3. His preferred method of dealing with governmental regulation and news media
4. His preferred method of personnel compensation
5. His style of value decision trade-offs between qualitative and quantitative issues
6. His perception of his risk position and his risk utility "curve"
7. His personal non-business objective
8. His reasons for being involved with real estate (a simple question revealing in most cases tremendous naivete and lack of in-depth preparation by the client)

E. In the process of developing the assignment with the client, keep in mind the following questions:

1. What is the Problem at hand?
2. From what Viewpoint or Perspective should the problem be analyzed?
3. What Judgments seem to be appropriate?
4. What Assumptions should be adopted?
5. Is the resulting Premise realistic?
6. What Derivation Process should be applied?
7. What Conclusion results?
8. What Alternative choices are available?

EXHIBIT 7

Worksheet Containing MUSTS and WANTS,

With Appropriate Weights Added, For a House-Purchase

MUST OBJECTIVES: Resource Limits and Requirements

Down payment not to exceed $10,000
Monthly payment (principal, interest, taxes, and insurance) not to exceed $300
Minimum of four bedrooms
Minimum of two bathrooms
Location outside of downtown area, within 45-minutes driving time to office parking lot
Occupancy within 60 days

WANT OBJECTIVES: Best use of resources, maximum results and returns, minimum disadvantage

	Weight
Minimum down payment	6
Lowest monthly payment	10
Location conveniently close to work	7
Able to use present furnishings, drapes	5
Shelter for two cars	4
Public transportation nearby	4
Location convenient to elementary and high schools	8
Location convenient to shopping center, stores	7
Workshop and storage space available	2
Stable resale value	7
Attractive; modern style and appearance	5
Good landscaping; trees, shrubs	4
Large play area for kids	5
Large, modern kitchen with a view	2
Large, comfortable family room	3
Location on quiet street, in good neighborhood	4
Minimum maintenance cost to house	7
Minimum risk - tax increase or special assessments	4

Source: Page 198, The Rational Manager by Charles H. Kepner and Benjamin B. Tregoe.

F. Since the problem percieved by the client may be poorly defined, the analyst needs to convert the stated problem into a sequence of issues which relate to the enterprise decision process outlined earlier.

1. The stated question "How much should I pay for the land?" is a step in implementation of the program. Go back to the statement of objectives "why do I need to invest in land?" and the search for opportunities, "how did we choose this piece of land?"

2. In general, you must discover what has been done, what explicit assumptions have been made, what implicit assumptions seem to be operating, and who made the decisions thus far.

3. A useful technique is always to reverse the question or place it in some hierarchy of values.
   a. For industrial real estate assume that working capital is preferrable to fixed assets. Therefore,
   b. Own no real estate - shift real estate problems by purchasing procedures.
   c. if you can't shift space needs, lease short term
   d. if you want the option of long term leases, negotiate a long term lease for a rental discount and then give back part of the discount if you cancel under a change of conditions clause.
   e. own or build only as last resort

4. One creative think system recommends conversion of new problem by analogy to old format; retail location is useful for any multi tenant space just as commodity terms made describe a mortgage. Familiar problems may need a purge of conventional answers by conversion to strange analogies.

G. Another way of understanding the problem is to relate it to soope! of services you can offer as in Exhibit 8 or the ideal way to approach a solution for the client. For example;

1. It is preferred to identify locational need and use requirements of a user before searching for a specific site.

2. If the site is already owned by a specific client, then it is necessary to adapt the use to the specific limitations of the site.

3. In the absence of a site in search of a use or a use in search of a site, the problem is to search for an investment opportunity in real estate.

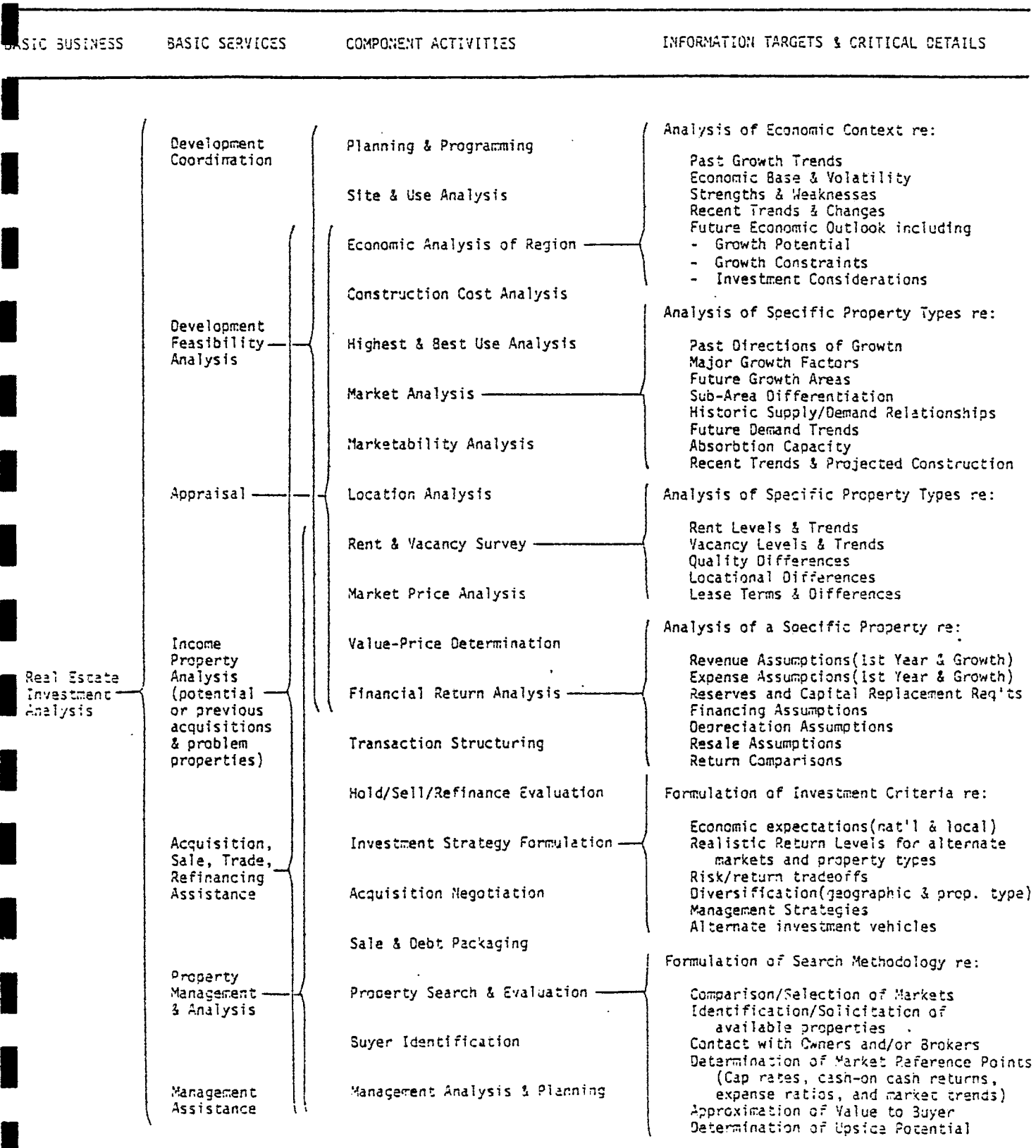
4. Limitations of a site owned may require the consultant to solve both a disposition and an acquisition problem.

H. Definiton of a report medium and viewpoint of an intended audience is critical in the early stages of defining the assignment.

I. In distinguishing between judgment and assumptions the analyst may need to be an expert on experts, helping to select members of a team of specialists under the control of a generalist.

EXHIBIT 8

SCOPE OF SERVICES



J. John Rasmussen recommends a work sheet defining who will provide key assumptions and judgments or data as illustrated in Exhibit 9.

K. Conceptualizing the work assignment and the work product can also be facilitated by a flow chart of the thought process or protocols for a site in search of a use (Exhibit 10), a use in search of a site (Exhibit 11), or the investor in search of a real estate opportunity. The latter will depend on the consultant initially reviewing the following strategic choices for the investor:

1. Degree of exposure to political risks (collective consumer action)

    a. Broad array of land use controls
    b. Vulnerability to subsidized or non-rational competition
    c. Dependency on government subsidized demand

2. Ability to generate channelled demand

    a. Control of space consumer
    b. Indirect control through reciprocity
    c. Indirect control of alternative supplies
    d. Indirect control through effective research and timing

3. Degree of acceptable management intensity

    a. Marketing tied to a specific personality
    b. Marketing tied to a specific set of high skill talents
    c. Marketing tied to quality, service, and convenience
    d. Marketing tied to technology/cost advantage (high tech/high touch product)
    e. Marketing based on consumer research segmentation

4. Degree of financial exposure per project

    a. Front end cost
    b. Peak hard dollar equity required
    c. Time line risks
    d. Maximum potential loss
    e. Holding power
    f. Efficiency of credit utilization

5. Tax strategy and exposures

    a. Federal income tax
    b. State taxes
    c. Real estate taxes
    d. Special assessments

6. Going concern versus liquidation options

    a. Estate tax and estate planning considerations
    b. Corporate liquidation
    c. Asset liquidity
    d. Management rewards, penalties, and survival

EXHIBIT 10

Figure 5

Analysis Process: The Search For a Site For a Use(s)

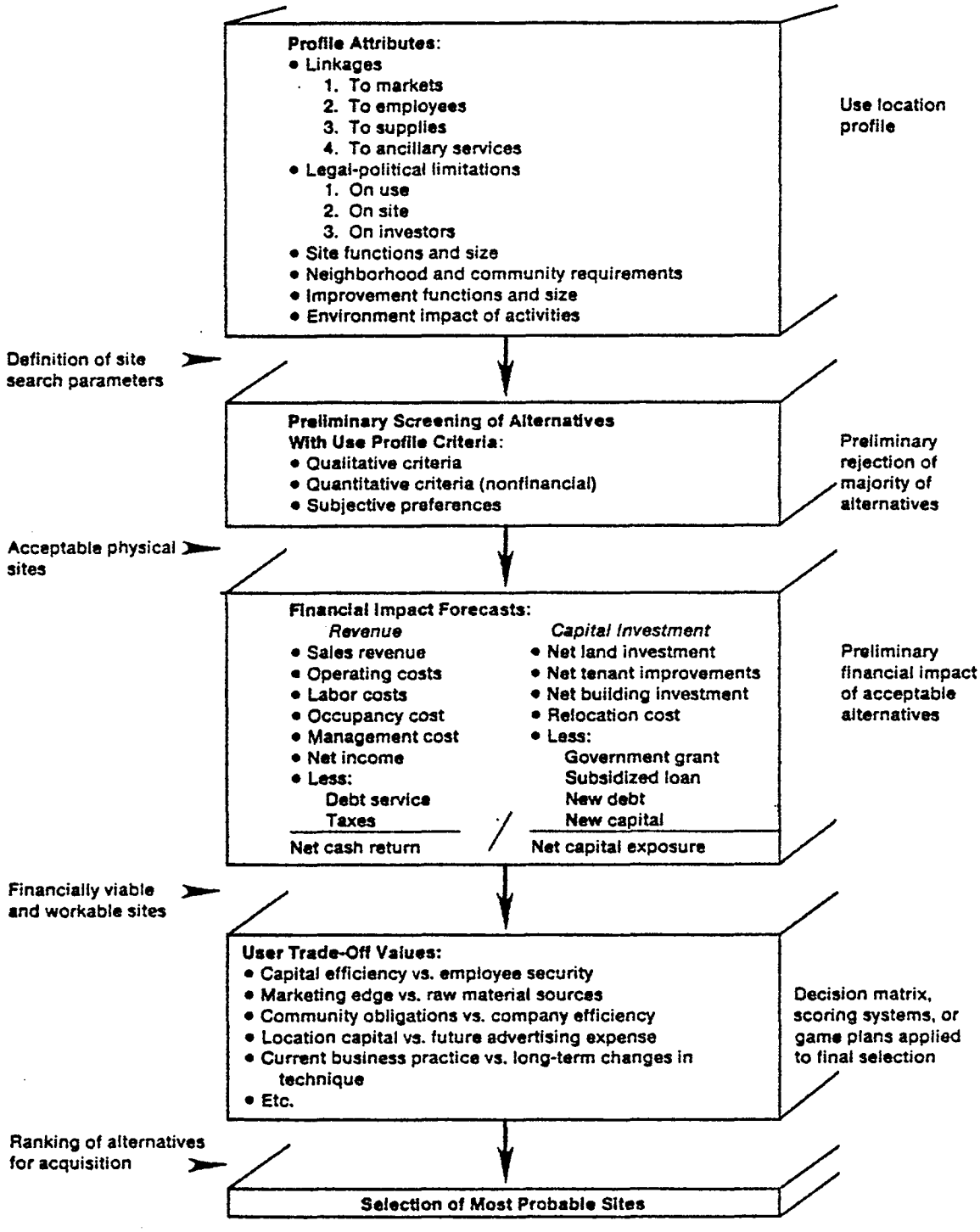
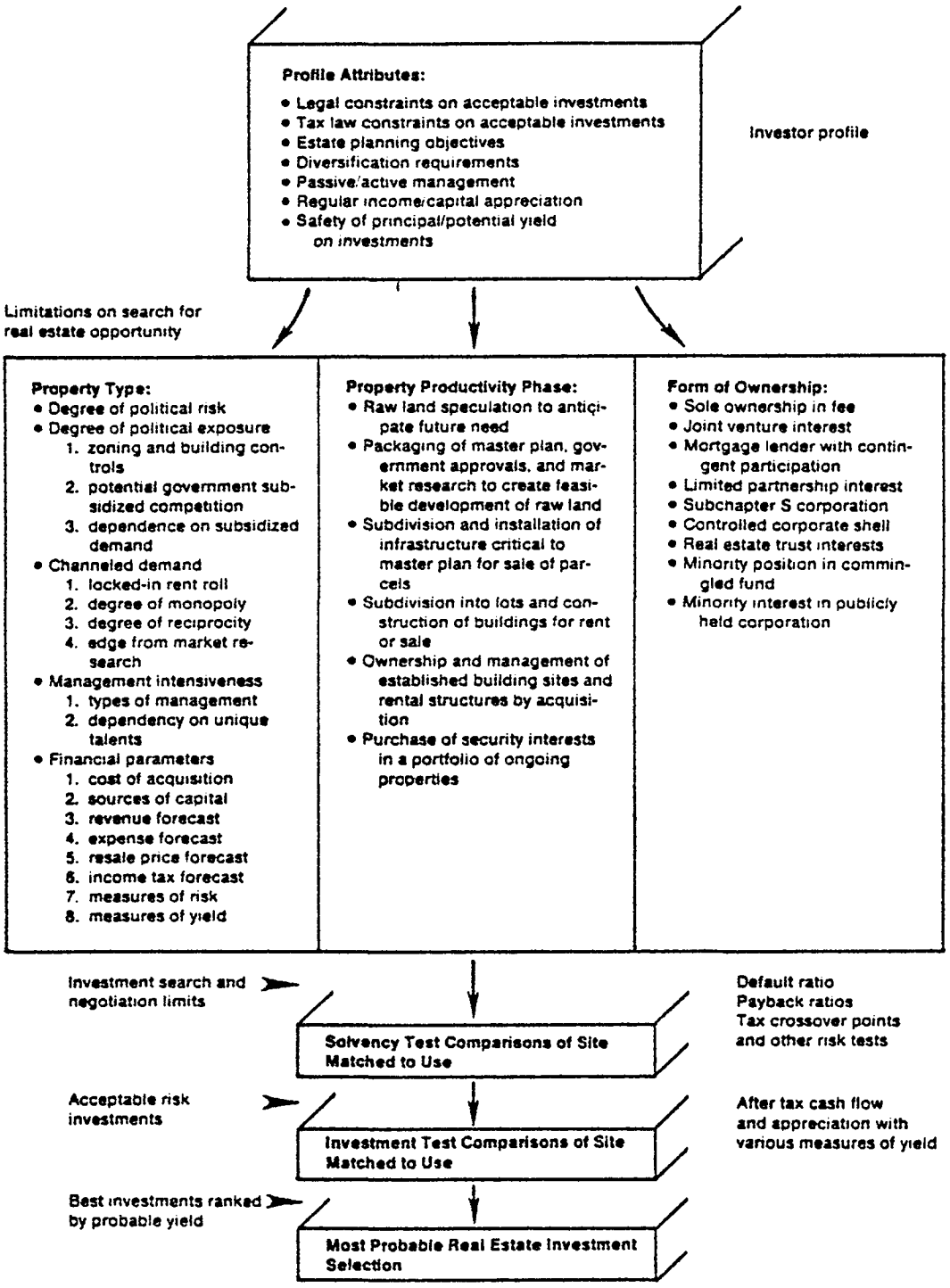


EXHIBIT 12

Figure 7
Process for Investor Selection of Real Estate



V. Financial Viability

Financial institutions confuse feasibility in terms of the ethical fit of a project to all parties impacted with the financial viability of the project--the adequacy of revenues and asset values to repay capital sources. Analysis of financial viability requires examining a set of financial assumptions in order to control variance between expectations and realizations, between pro forma budgets and actual P&L statements.

A. Analysis is risk management, control of variance.
B. There are essentially two types of risk exposures:

1. Static risks (uncontrollable, or external events) are those which can only cause a loss due to surprise upset of a plan.

2. Dynamic risks (partially controllable internal events) can produce profit or loss and are best controlled by the finesse of management execution of a plan.

C. Risk evaluation or comparison grows out of the function of risk management for an enterprise.

1. Risk management has two objectives:

a. First priority - conservation of existing enterprise assets despite surprise events.
b. Second priority - realization of budgeted expectations despite surprise events.

2. The process of risk management involves systematic and continuous:

a. Identification of significant exposures to loss
b. Estimation of potential loss frequency and severity
c. Identification of alternative methods to avoid loss
d. Selection of a risk management method
e. Monitoring execution of risk management plan

3. The risk management process is both a philosophy of inquiry or analysis and a checklist of management concern, which is attempting to answer systematically "WHAT IF...?" questions, to anticipate surprise and to provide for a response or adjustment in advance of the contingency.

D. Identification of significant exposures to loss can begin by using standard business documents as reminders, such as:

1. Review of balance sheet accounts
2. Review of profit and loss statement accounts
3. Review of business organization or function chart
4. Review of elements of financial feasibility analysis

E. Significant has to do with potential loss frequency, loss severity, and degree of uncertainty.

1. Very frequent and minor become expense accounts
2. Less frequent but predicatable and major become reserves or budget allowances.

3. Infrequent, uncertain but very severe become issues of risk management.
4. A 50/50 probability is the most uncertain outcome.

F. The alternative methods of avoiding loss which everyone subconsciously uses include:

1. Eliminate risk exposure
2. Reduce frequency or severity of loss (diversification or mortgage loan closing process)
3. Combine risks to increase predictability (reserves for expense)
4. Shift risk by contract (subcontracts or escalator clauses)
5. Shift risk by combination (diversification) by contract (insurance)
6. Limit maximum loss (corporate shell or limited partnership)
7. Hedging (sale and leaseback, options, contingent sales)

G. Risk management concepts leads to understanding by analogy of the true essence of a mortgage contract, an equity commitment, or a land lease.

1. A mortgage is a classic straddle in two markets for the borrower; it is a call on a space-time commodity in a rising market and a put to the lender in a falling market. It is also a straddle in the money market.

2. Tax savings from depreciation can refund the down payment to make a perfect straddle.

3. A joint venture profit distribution formula is like reinsurance. It sells a preferred straight return for equity capital, additional equity for a preferred return on profits, and additional equity for sharing in the maximum possible profit. The equity position is like an insurance company using pro rata reinsurance, loss ratio stabilization, and excess of loss coverage.

4. Apartment buildings sold on land contracts are financed to 100% of value and the down payment is a prepaid fee for a put--liquidated damages.

5. Equity ownership is the degree to which you can divert cash flow to your benefit by means of control of expenditure decisions.

6. An unsubordinated land lease enjoys the capital guarantees of all improvements constructed thereon--like lending 100% of the cat and enjoin the increasing collateral of the cow.

VI. Property analysis to determine alternative uses

A. Elements of analysis are approached as an inductive research problem moving progressively from on-site facts to external conditions. The appraiser needs to examine the following elements in sequence: (See Exhibit 3)

1. Physical attributes of site and improvement.

2. Legal-political constraints on alternative uses.

3. Basic financial parameters of alternative uses.

4. Existence of effective market demand for remaining alternatives.

5. Comparative risk and return evaluation of alternatives for which there may be demand.

B. A physical analysis of inventory of site and improvement attributes should include the five following subsets:

1. Physical attributes (static) include site dimensions, soils, geology, topography, site improvements and capacity, and on-site flora and fauna.

2. Legal-political attributes include not only zoning and subdividing codes at the local level but also relevent federal, state, or private controls which might direct or restrict site use. As appropriate, the appraiser should note administrative patterns relevant to application of law to use of subject site.

3. Linkage attributes identify relationships of site to networks, populations or activities centers that might generate potential demand for the subject property.

4. Dynamic attributes are those attributes which exist in the mind of others in terms of status, anxiety, beauty, imagery, sentimentality or other perceptions which attach to the subject property to the degree that these are economically significant.

5. Environmental attributes of the site concern with off-site natural systems of which the subject property may be a part such as riparian rights, pollution down wind, storm water runoff, etc. Even the shadow cast by the structure off-site may become significant in the era of solar energy. Impacts on others may be perceptual (i.e. dynamic) or fiscal (legal-political) as well.

C. Static site attributes which begin to narrow the potential market to alternative uses should include both the facts and their implications for productive use in such topic areas as:

1. Size, shape, and lot area

2. Topography, soils, geology, slope stability, bearing capacity, septic suitability, potential for subsidance, etc.

3. Water table, wells, streams, ponds, storm water swales, shoreland edges, and bulkhead lines, flood plain designations, etc.

4. Flora and fauna which enhance marketability or which might cause environmental impact litigation

5. Concealed utility easements, old foundations, etc.

6. Existing on-site utility services and capacity

7. Access points to public thoroughfares or private right-of-ways

8. Site improvements such as paving, retaining walls, pedestrian paths, culverts, etc.

9. Landmark attributes or historical site features

D. An inventory of legal attributes should move from specific site controls imposed by local zoning ordinances to state and federal regulations as well as private controls which may intervene. The appraiser has an obligation to report foreseeable attitues or future legislation which will affect administration of these ordinances relative to future uses of the site. (See Exhibit 13)

1. All alternative setback lines and building envelope interpretations relative to site

2. Legal uses under applicable zoning and critical limitations of each relative to FAR, bulk, parking requirements, DU count, etc.

3. Special zoning options which may be available at owners option such as rezoning, downzoning, PUD zoning, etc.

4. Special controls imposed by extra-territorial zoning, tax conservancy commitments, subdivision process, urban renewal districts, tax increment districts, etc.

5. Special state or federal constraints under airport approach zone districts, harbor commissions, coastal zones, Office of Environmental Protection Agency, etc.

6. Public attitudes of public commissions for sewer, water, highway, planning, or building administration

7. Public and planning premises of community master plans relative to sprawl, restoration, redevelopment, and other land use priorities as these attitudes will affect administraion of the law

8. Existing or impending legislation relative to such matters as:

    a. Septic tank installation
    b. Water quality for ground water, water recharge areas, storm water runoff, salt water encroachment, etc.
    c. Air quality standards relative to use, HVAC performance, micro-climate interference, etc.
    d. Conservation of envrionmental edges, prime agricultural land, wet lands

9. Define physical system sub-systems

    a. Foundation system
    b. Structural system
    c. Floor system
    d. Ceiling system
    e. Roof system
    f. Exterior wall system
    g. Interior wall system
    h. Horizontal circulation sytsem (provacy, interaction, congestion, confusion)
    i. Vertical circulation system (handicapped code, cost, economy of scale and height)

10. Delineation of functional systems

    a. Bay spaces
    b. Module unit
    c. Ceiling heights
    d. Visual codes - such as mass, entrance, claustrophobic signals

11. Public controls on possible alternative special uses such as restaurants, places of public assembly, schools, etc.

EXHIBIT 13

Hierarchy of Site Specific Legal/Political Situs Attributes

I. Federal Site Specific Controls

A. Environmental Protection Agency
B. U.S. Army Corps of Engineers
C. Federal Aeronautics Administration
D. Department of Housing and Urban Developmental Agencies

1. Insurance underwriting standards of Federal Housing Administration
2. Eligibility standards of Urban Development Action Grant Program
3. Office of Interstate Land Sales Standards
4. Office of Flood and Catastrophe Insurance

E. Bank and Savings & Loan Deposit Insurance
F. Farm Home Administration Standards of Eligibility for Loans and Guarantees
G. Small Business Administration Standards for Eligibility for Loans and Guarantees
H. Forest Service, Wildlife Service or Department of Administration management areas

II. State and Regional Planning Site Controls

A. State Land Use Plans
B. State Highway Department Access Controls
C. State Department of Health Controls on Septic Tanks, Wells, Shorelands,
D. State Building Codes
E. State Aeronautical Commission Rules
F. State Environmental Protection Rules
G. Regional Planning Commission Standards and Recommendations
H. Coastal or Wilderness District Controls

III. Local Community Controls

A. Subdivision, Building, and Housing Codes
B. Special Planning and Assessment Districts
C. Extra Territorial Zoning Powers
D. Discretionary Commissions such as Metropolitan Sewer, Water, Port Authorities, Industrial Development, etc.

IV. Site Specific Controls

A. Private Covenants as to Use and Permissible Building Envelope
B. Easements
C. Property Owner Association Rules Tied to Lot Title
D. Existing Leases or Portions of the Property
E. Existing Entitlements Transferable with the Title, such as Permits to Build a Dam or Water Impoundment, Dredge Water Front or Conditions Within Financing Agreements

F. Analysis of the static and legal/political attributes of site and structure should be summarized in terms of competitive advantages and disadvantages of plausible alternative uses for costs, pricing, marketing, and political administration of compatibility.

1. Some static attributes may help identify most probable user types (Ex. special display window sizes may be suitable for antique or art display) while attributes will make certain uses unlikely (Ex. floor load limitations of fire proofing weights required of places of public assembly).

2. Some static or legal attributes can provide monopoly advantages because suitability is unique relative to lands all around it, because of exemption from certain regulations, or existing approvals of development plans, including licenses for dredging, building code variances, etc.

3. Some attributes lead to higher cost which the front door approach may reveal as leading to excessive rents or prices.

G. Linkage attributes relate to subject property to both networks of supporting infra-structure which contributes toward effective demand for the property as economic space time or the supply and demand impact of related activity centers which may interact with the subject property.

1. Analysis moves best from the borders of the subject property outward to expanding zones of potential demand or competitive supply.

2. Utility services are network linkages in terms of:

   a. Limitations on sewage processing, storm water retention or runoff constraints
   b. Community energy supplies, priorities, and capacity
   c. Water processing and chemistry as applicable
   d. Possible dependency on resources such as wild game and fish, underutilized labor pools, fire department coverage zones, etc.

3. Street, sidewalk, rail, and public transit systems including access points, traffic department controls, etc.

4. Relationship of subject site to contiguous properties, balance of city block, and neighborhood layout pattern.

5. Relationship of subject site to generators of potential needs and uses for the subject site, such as:

   a. Employment centers
   b. School system alternatives
   c. Retail services
   d. Complimentary existing nearby uses
   e. Recreational services
   f. Health care systems
   g. Security systems
   h. Waste disposal services

6. Neighborhood demographics (population, age, employment, income, etc.)

7. Relationship to competitive alternative and estimate of supply of available space, competitive ranking, and exposure of subject site to competitive interception of potential demand.

H. Dynamic attributes are those characteristics which exist in the minds of the beholder, which are mental or emotional responses which a site or project stimulates and which affect decision making behavior.

1. Image conditioning of the approach zone

2. Visual factors in terms of prominence of the site, views from the site, potential for controlled sight lines, etc.

3. Prestige and status

4. Anxiety factors of access and security

5. Noise as a function of traffic count (FHA noise pollution manual)

6. Prevailing air currents and airborne pollution (phosphate plants or sulphite paper mills, for example).

7. Political images established for a site by the public positions of local politicians or vested interest groups.

8. Historical community reputation and values attached to the project site and structures.

I. Environmental attributes of the site recognize that the real estate product today must respond not only to the needs of the individual consumer in the marketplace but to the collective community of consumers represented by the community political administrators. Land use must be sold to both "markets." If the proposal won't sell at City Hall, there will be little opportunity to market the product individually. Pre-architectural programs must not only consider physical factors of environmental impact off-site, but in addition:

1. Silhouette of social impact in terms of public perceptions of:

   a. Displacement of existing residents and neighborhood units
   b. Contribution to social integration or mobility barriers
   c. Contribution to land use heterogeneity
   d. Contribution to regional and community master plans

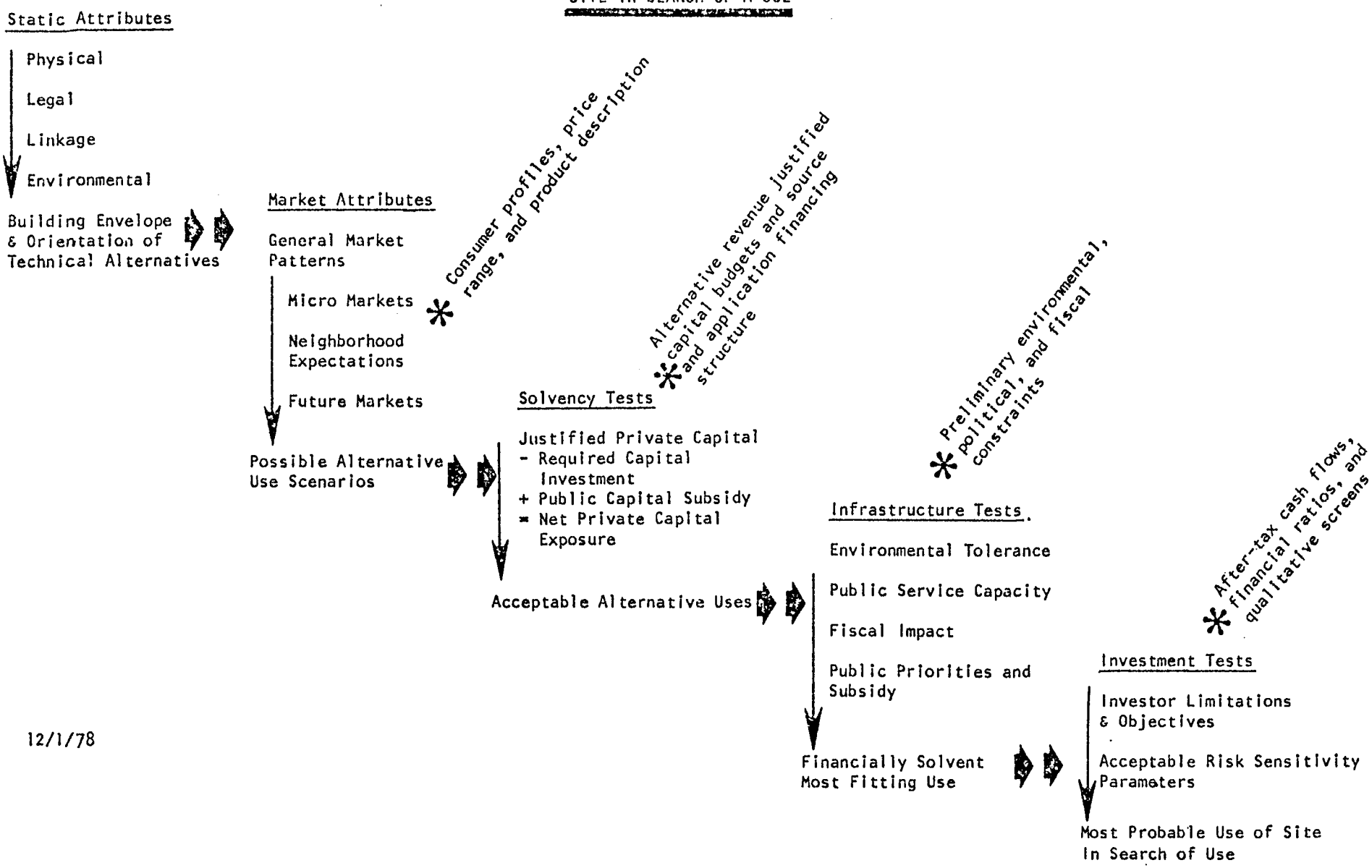
2. Fiscal impact on the community where appropriate:

   a. Direct impact on real estate tax revenues
   b. Direct impact on other governmental revenue
   c. Direct impact on incremental government
   d. Secondary contributions to local government revenues
   e. Secondary cost burdens created for local communities

3. Social factors in the ethical environment:

EXHIBIT 14

SITE IN SEARCH OF A USE



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FEASIBILITY OF ALTERNATIVE USES

Feasibility Factor	Scenario 1 Return to Former Use	Scenario 2 Purchase by Welfare Agency	Scenario 3 Conversion to Class B/C Office	Scenario 4 Conversion to Apartments with Office on 1st Floor	Scenario 5 Conversion to Apartments with Existing Bar	Scenario 6 Demolition and Sale of Site
Market Demand Risks	Demand very elastic relative to price unless room rates subsidized by welfare agencies	Welfare agencies lack capital resources to purchase and remodel facilities, given the absence of government funding	Office market becoming more price sensitive; would not accept neighborhood and lack of parking unless rents were lower than necessary to support remodeling	Strong demand for spacious two bedroom units in CBD area	Though there is a strong demand for affordable downtown housing, consumer survey shows tenant reluctance to live above noisy/potentially malodorous bar-restaurant	Soft market for vacant sites which cannot be assembled into larger plottage; parking revenues from 20 spaces inadequate to carry clearance costs
Legal/Political Acceptability	Inconsistent with long term City goals for Olin Place	Mixed acceptability as interim use as housing for transient males by some groups; favored by welfare advocates and disfavored by local residents	Neighborhood resistance to increased demand for street parking	Preferred use, given need for downtown housing and political statements by alderpersons for reduction of bar business in residential neighborhoods	Preferred use for housing is compromised by existing bar management agreement	Inconsistent with constituency favoring landmark designation
Technical Construction Problems and Capital Cost Risks	Failure to repair within one year may have jeopardized grandfathered non-conforming building conditions. Otherwise this use has lowest construction risks of Scenarios 1 through 5	Capital costs of renovation to state standards excessive for short term use	Variance needed for parking requirement of 1 stall per 300 SF to 1 stall per 2,500 SF of office space	Spacious apartments with views provide favorable rent/cost per SF ratio--housing code creates more remodeling risk than commercial code	Apartment mix cheapened by retaining existing bar operation--smaller units require more plumbing and bring less favorable rent/cost per SF ratio	None
Relative Investment Power Based Upon Revenue Generation Potential	$192,765	$120,380	$80,331	$103,220	($10,513)	$13,778
Special Income Tax Advantages or Public Subsidies Available	None	None	Rehabilitation tax credit of 20% for older commercial building conversion plus possible industrial bond financing	Possible historic landmark status for 25% rehabilitation tax credit plus tax incremental financing (TIF) assistance	Possible historic landmark status for 25% rehabilitation tax credit. TIF less likely because increase in tax is smaller	None
Real Estate Tax Consequences to City	Modest increase in assessed value	Loss of $194,300 tax base with tax-exempt agency as owner	Real estate tax base would be multiplied approximately 3 times the present assessment	Real estate tax base would be multiplied approximately 3 1/2 times the present assessment	Real estate tax base would be multiplied approximately 2 1/2 times the present assessment	Loss of approximately $140,000 of tax base

EXHIBIT 15

a. Impact on supply/demand equilibrium
b. Stamina of project sponsor in the face of public pressure
c. Vulnerability of potential project buyers to secondary political pressures and counter attack
d. Potential uses requiring unique political resources or private/public consortiums

J. For the experienced real estate analyst systamatic narrowing of alternative uses from study of the attributes leads to a limited series of alternatives which can then be given a final screening in terms of preliminary financial analysis and effective demand. The analyst may review these attributes to identify alternative uses by emphasizing one or more of the following angles of inquiry.

1. Does any site of site attributes suggest a special space/time - to money/time configuration? For example, a high floor area ratio but little parking may suggest a building with a low person occupancy, such as a switchboard building or luxury apartment with minimum number of dwelling units.

2. What attributes of the subject site provide monopoly characteristics or are inferior to alternative sites?

3. What patterns in adjacent or competitive structure represent a trend to which the subject property should adapt?

4. What patterns of use is revealed by transactions in similar properties on nearby locations?

K. A program of use or reuse can be called a scenario and may be suggested by physical characteristics of the property, contiguous property trends and conditions, or known supply shortages with which the appraiser is familiar.

L. Ranking of these scenarios for economic power is accomplished by means of the Back Door approach, i.e., the revenue justified investment for the property, as is alternative whrksheets for this approach using the default point and the debt cover ratio as the critical conversion of income to capital are provided in Cases 1, 2, and 3.

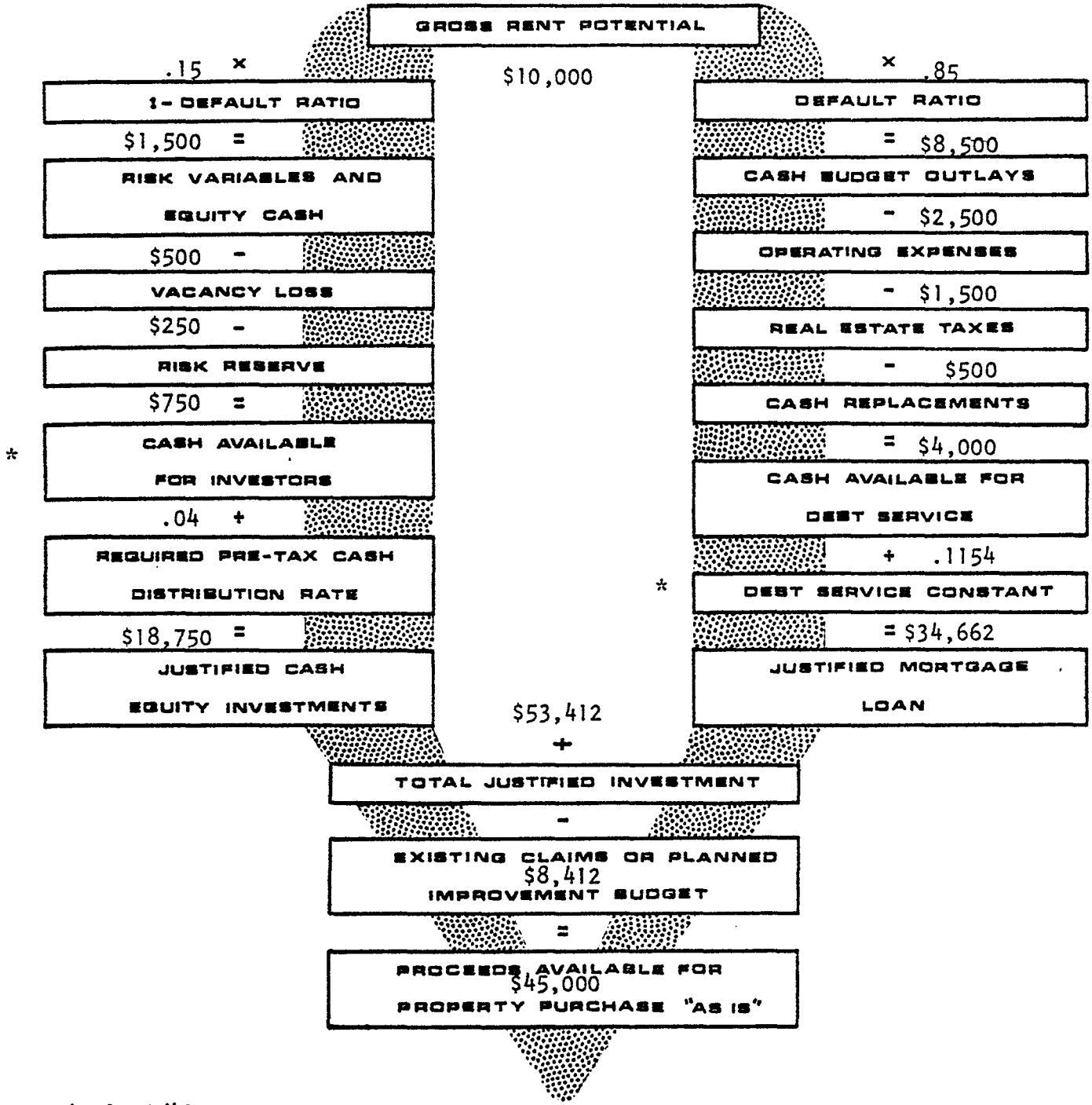
M. Economic power has to be qualified in terms of marketing risks and capital budgeting risks of each of the alternative uses before alternative uses can be ranked in summary fashion as in Exhibit 15.

1. Note that Exhibit 15 integrates the basic elements of preliminary feasibility analysis.

2. Remaining disucssion will emphasize market risk which is the primary cause of misleading appraisal conclusions

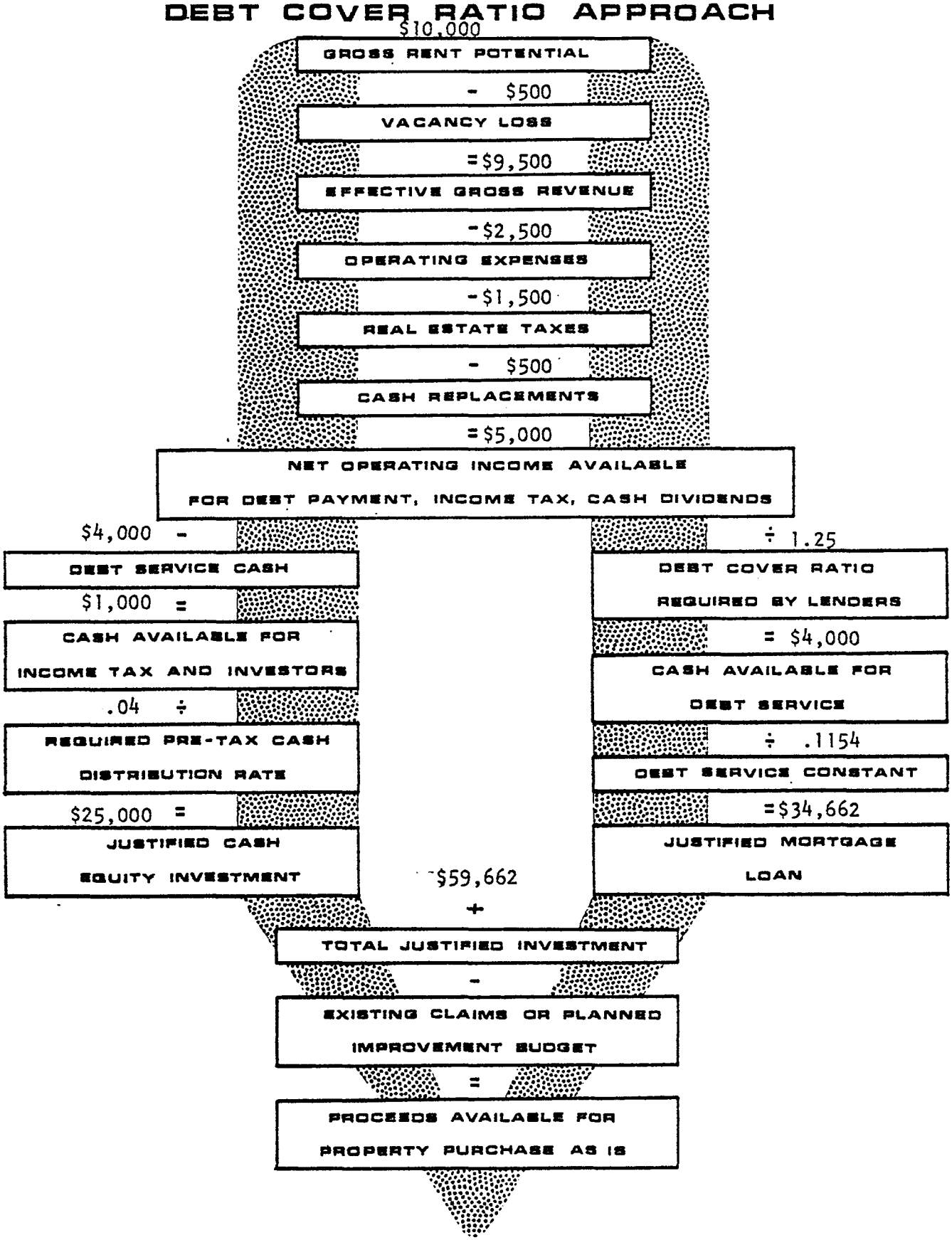
CASE I

REVENUE JUSTIFIED CAPITAL BUDGET
DEFAULT RATIO APPROACH



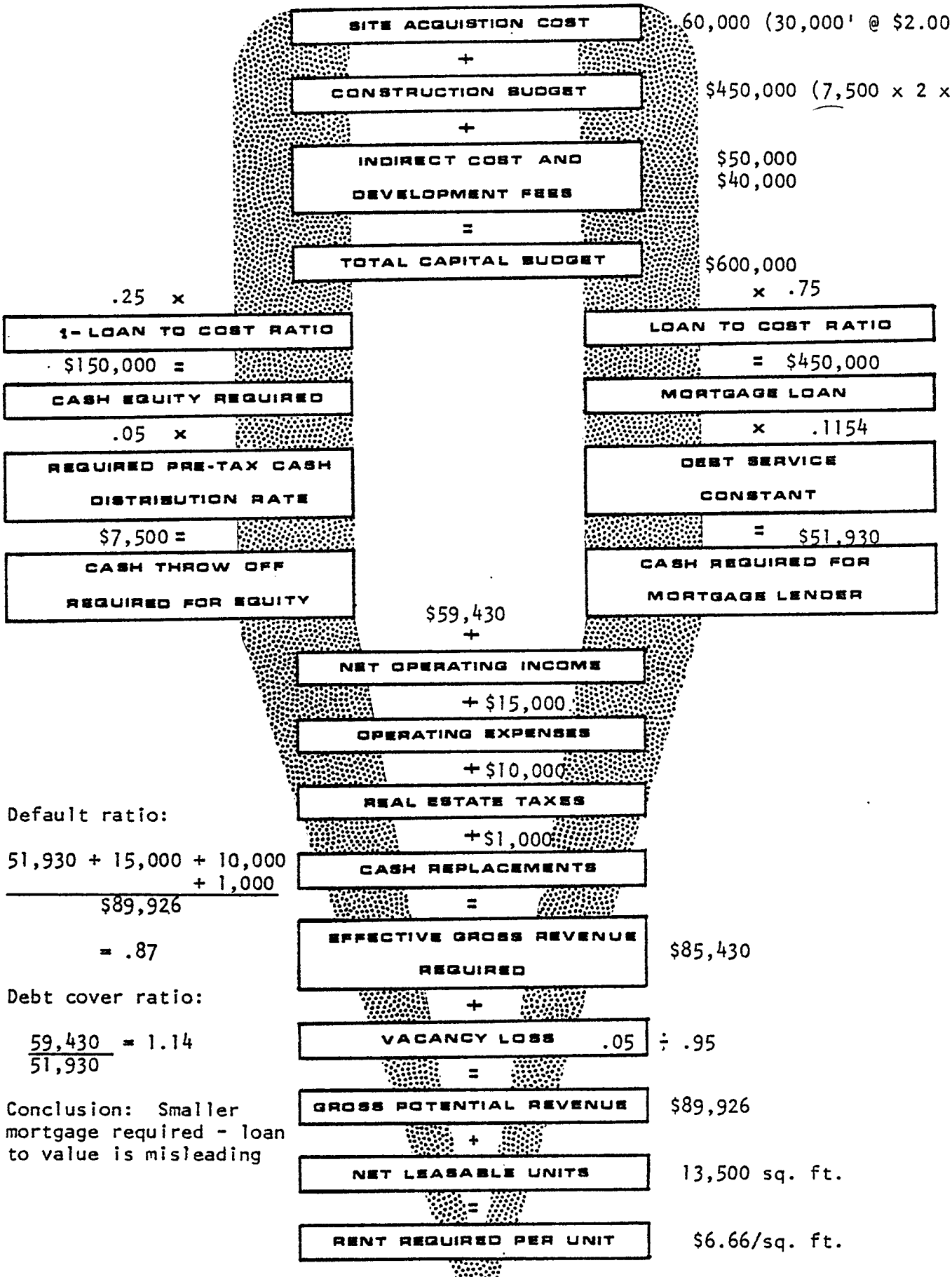
* 10 3/4% 25 year monthly pay is .009620 x 12 = .1154
9% 25 year monthly pay is .008391 x 12 = .1006
or a $40,000 justified loan

REVENUE JUSTIFIED CAPITAL BUDGET
DEBT COVER RATIO APPROACH



* *Note that a full $1,000 is distributed to investors rather than the $750 in Case*

REVENUE REQUIRED BY CAPITAL BUDGET LOAN TO COST RATIO APPROACH



Default ratio:

$$\frac{51,930 + 15,000 + 10,000 + 1,000}{\$89,926} = .87$$

Debt cover ratio:

$$\frac{59,430}{51,930} = 1.14$$

Conclusion: Smaller mortgage required - loan to value is misleading

VII. Preliminary financial analysis begins with a variety of ratios which are intended to reveal the tolerance of the project for variance in key assumptions, the ability absorb surprise, as well as dynamic risk. These ratios become the objective of further refinement through sensitivity analysis. Among the important ratios we have used so far are:

1. Absorption rate:

$$\frac{\text{Units sold or leased per period}}{\text{Total supply of units available for sale or lease}} = \text{Absorption rate}$$

2. Capture rate:

$$\frac{\text{Units in specific project sold or leased per period}}{\text{Total competitive units sold or leased per period}} = \text{Capture rate}$$

3. Vacancy ratio:

$$\frac{\text{Space unit} \times \#\text{ of units} \times \text{rental payment periods per year} \times \text{turnover rate} \times \text{rental payments lost} \times \text{rent}}{\#\text{ of units} \times \#\text{ of payments} \times \text{rent per period} = \text{(gross rent)}}$$

1-bedroom apartments x 20 x 50% turnover x 1 month lost 1 $200/mo.

$$\frac{20 \times 50\% \times 1 \times 200}{20 \times 12 \times 200}$$

$$\frac{2000}{48000} = \frac{1}{24} = 4.2\%$$

4. Expense ratio:

$$\frac{\text{Expenses}}{\text{Gross rent}}$$

5. Net income ratio:

$$\frac{\text{Net income}}{\text{Purchase price + additional costs}} = \text{Overall rate or cap rate (should be = to debt service constant or up to 2\% lower)}$$

6. Debt cover ratio:

$$\frac{\text{Net operating income}}{\text{Debt service}}$$

7. Default ratio:

$$\frac{\text{Operating expenses + real estate taxes + short term debt + interest + principal payments}}{\text{Gross rent}}$$

8. Loan to value ratio:

$$\frac{\text{Mortgage loan balance}}{\text{Purchase price}}$$

9. Cash on cash:

$$\frac{\text{Net income - debt service - reserves + refinancing surplus}}{\text{Total capital budget - original mortgage balance}}$$

IV. Understanding the basic ratios leads to manual or data processing of sensitivity ratios; it is important to remember that projecting specific returns is not a forecast for the future; it is intended to be a basis for measuring the tolerance of the financial parameters for variance from the initial assumptions and identifying the thresholds of insolvency or incompatibility with competitive markets. Refer to John Nabors model in Exhibit .

If project makes sense before tax, then it is useful to refine analysis for projections over time on an after tax basis.

1. Accounting tabs for after tax income (See Exhibit)
2. Accounting tabs for after tax sale proceeds (See Exhibit)
3. Basic pattern of after tax financial analysis requires a pattern of assumptions (See Exhibit)

After tax speandable cash ratios include:

1. Distributable cash from operations:

Cash throwoff
- income taxes
Cash from operations
- reserves
- repayment of working capital loans
= Distributable cash

2. Spendable cash attributable to real estate:

Distributable cash
+ tax savings to other income
+ surplus from refinancing
= Spendable cash

3. After tax sale proceeds:

+ return of working capital
+ liquidation of sinking funds
= cash reversion

4. Return on net worth B/4 tax:

$$\frac{\text{Cash throwoff + change in net worth}}{\text{Net worth at end of previous period}}$$

5. Return on net worth after tax:

$$\frac{\text{Spendable cash + (chnage in net worth - change in taxes on sale)}}{\text{Net worth at end of precious period - taxes on sale}}$$

6. Payback ratio:

$$\frac{\text{Cumulative spendable cash}}{\text{Original budget - original debt + amount of personal guarantees}}$$

Precise definition of cash returns is critical in the negotiation of participating loans and partnerships

1. Defining effective gross, net income or cash throwoff with a participation loan.

2. Defining base number in which general partner will share

HANDBOOK: ORDER FORM

Now that you have had the opportunity to use and evaluate the Real Estate Financial Feasibility Analysis WORKBOOK, you may wish to explore more comprehensively the topic of Project INVESTMENT ANALYSIS. The Real Estate Financial Feasibility Analysis HANDBOOK has been written specifically to quickly and accurately present the steps necessary to complete a Project INVESTMENT ANALYSIS. This 200 page text has been written in the terminology that both a novice and practitioner can easily understand. The HANDBOOK is designed to compliment, reinforce, and elaborates on the COST-BENEFIT analysis systems presented in the WORKBOOK. In addition, a comprehensive index, glossary, and set of compound interest tables are provided for reference. Topics presented in the HANDBOOK include:

1. PROCESS INTRODUCTION:
   - The Real Estate Development System
   - The Feasibility Analysis Process
   - The Analysis Framework
   - The Project Cost-Benefit Analysis Process
   - Market Justified Cost-Benefit Analysis
   - Project Solvency & Financing Justified Cost-Benefit Analysis
   - The Transition
   - Cash Flow Analysis
   - Investment Value Analysis

2. THE OPERATING INCOME STATEMENT:
   - Real Estate Market Analysis
   - Revenue Generation
   - The Lease Commitment
   - Operating Expenses

3. INCOME CAPITALIZATION:
   - Capitalization in Perpetuity
   - Investment Value
   - Compound Interest
   - Determination of the Discount Rate
   - Standard Compound Interest Factors

4. THE CAPITAL BUDGET:
   - The Procurement Process
   - Capital Cost Components
   - Interim Financing
   - Life Cycle Cost Analysis
   - Total Present Value Cost Approach
   - Equivalent Uniform Annual Cost Approach

5. THE MORTGAGE-EQUITY FINANCING PACKAGE:
   - Straight Term Mortgage
   - Chattel Mortgage
   - Amortized Mortgage
   - Refinancing Surplus
   - Mortgage Debt Service
   - Mortgage Constant
   - Equity
   - Leverage

6. BEFORE AND AFTER TAX CASH FLOWS:
   - Cash Throw-off
   - Taxable Income Deductions
   - Income Tax Liability
   - Cash from Operations
   - Working Capital Loan
   - Distrbutive Cash After Taxes
   - Tax Savings on other Taxable Income
   - Refinancing Surplus
   - Spendable Cash After Taxes

7. PROCEEDS FROM RESALE & TOTAL INVESTMENT VALUE:
   - Resale Price
   - Reversion
   - Taxes Due at Time of Sale
   - Capital Gain Tax
   - Total Investment Value

8. EVALUATION OF INVESTMENT PERFORMANCE:
   - Before Tax Ratio Analysis
   - Default Point
   - Before and After Tax Equity Payback
   - Rate of Return Indicators
   - Investor Preference for Return Measures
   - Sensitivity Analysis

9. APPENDIX:
   - Cost Benefit Worksheets
   - After Tax Equity Investment Value - Problems 1 & 2
   - Compound Interest Tables
   - Glossary
   - Index
   - Sources

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PLEASE SEND ME:

_____ Copies of the Real Estate Financial Feasibility Analysis HANDBOOK: _____

(@ $12.00 per Copy, including shipping and handling)

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Post Office Box 194
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LEGEND: EVALUATION OF PROJECT COST AND OPERATIONS DATA MANUAL SUITABILITY

LEGEND

	RECOMMENDED:	COMPLETE DATA CONTENT WHICH HAS A STRONG FIT TO THE FORMAT OF THE MODELS. The data manual provides comprehensive information which can be utilized to best advantage in the format of the decision models under consideration.
	RECOMMENDED WITH RESERVATIONS:	COMPLETE DATA CONTENT WHICH HAS A WEAK FIT TO THE FORMAT OF THE MODELS. The data manual provides comprehensive information organized into categories which can not be successfully intergrated into the format of the decision models under consideration.
	RECOMMENDED WITH RESERVATIONS:	INCOMPLETE DATA CONTENT WHICH HAS A STRONG FIT TO THE FORMAT OF THE MODELS. The data manual does not include all the necessary information required by the decision models; but the data categories included can be satisfactorily utilized in the format of the decision models under consideration.
	NOT RECOMMENDED:	INCOMPLETE DATA CONTENT WHICH HAS A WEAK FIT TO THE FORMAT OF THE MODELS. The data manual does not include all the necessary information required by the decision models; and the data categories included can not be successfully intergrated into the format of the decision models under consideration.

APPENDIX TABLE OF CONTENTS

SOURCES				CONTENT ORGANIZATION							
				DESCRIPTION OF COST DATA							
				Method			Uses				
NAME OF DATA SOURCE	Publisher's Address	Initial Cost 1st Year	Frequency of Publication	Comparative Unit Sq. Ft. + Cu.Ft.	Unit (Component System)-In-Place	Quantity Survey	Valuation	Initial Estimate	Intermediate Estimate	Detailed Estimate	Calculation of Component Depreciation
BOECKH BUILDING COST GUIDE: COMMERCIAL	E.H.Boeckh Company American Appraisal Associates, Inc. 615 E.Michigan St. Milwaukee, Wisc. 53201	$18.00	New Edition Published Annually	Yes	No	No	Yes	Yes	No	No	Yes (1a)
BOECKH BUILDING COST GUIDE: LIGHT INDUSTRIAL	E.H.Boeckh Company American Appraisal Associates, Inc. 615 E.Michigan St. Milwaukee, Wisc. 53201	$15.00	New Edition Published Annually	Yes	No	No	Yes	Yes	No	No	No (2a)
BOECKH BUILDING VALUATION MANUAL SECOND ED.	E.H.Boeckh Company American Appraisal Associates, Inc. 615 E.Michigan St. Milwaukee, Wisc. 53201	$88.00 Includes quarterly up dating of time-location multipliers	$52.00 Also includes quarterly Up-dating	Yes	Yes (3a)	No	Yes	Yes	Yes	No	Yes
DODGE BUILDING COST CALCULATOR AND VALUATION GUIDE	Dodge Building Cost Services McGraw-Hill Information Systems Company 1221 Avenue of the Americas New York, N.Y. 10020	$82.00 Includes three quarterly supplements	$62.00 Also includes quarterly materials	Yes	No (4a)	No	Yes	Yes	No (4a)	No	Yes (4b)
DODGE DIGEST OF BUILDING COSTS AND SPECIFICATIONS	Dodge Building Cost Services McGraw-Hill Information Systems Company 1221 Avenue of the Americas New York, N.Y. 10020	$122.00 Includes semi-annual supplement	$92.00 Also includes supplement	Yes	No	No	No	Yes	No	No	Yes (5a)
DODGE CONSTRUCTION SYSTEMS COSTS	Dodge Building Cost Services McGraw-Hill Information Systems Company 1221 Avenue of the Americas New York, N.Y. 10020	$39.80	New Edition Published Annually	Yes	Yes (6a)	No	No	Yes	Yes	Yes (6b)	Yes
DODGE MANUAL FOR BUILDING CONSTRUCTION PRICING AND SCHEDULING	Dodge Building Cost Services McGraw-Hill Information Systems Company 1221 Avenue of the Americans New York, N.Y. 10020	$28.80	New Edition Published Annually	No	No	Yes	No	No	No	Yes	Yes (7a)

PROJECT ITEMS INCLUDED IN COST DATA						ADJUSTMENTS		SELECTED SPECIAL FEATURES
Land Costs	Sitework	General Contractor Overhead & Profit	Architect/Engineer Fee	Construction Financing Costs	Labor Cost Segregated From Material Costs	Location Modifier	Time Modifier	
No	No	Yes (1b)	Yes	No	No	Yes	No	1a. Comparative unit costs are segregated for air-conditioning, fire protection, & elevators only. 1b. A 5% cost for contingencies is included.
No	No	Yes (2b)	Yes	No	No	Yes	No	2a. Comparative unit (sq.ft.) costs are given for air conditioning, fire protection, and elevators only. 2b. A 5% cost for contingencies is included.
No (3b)	No (3c)	Yes (3d)	No (3e)	No	No	Yes	Yes	3a. Unit-in-place costs are given for walls, foundations, framing, floors, floor finish, roof, ceiling finish, partitions, plumbing, HVAC, electrical, fire protection & a large number of miscellaneous equipment and improvements. 3b. Criteria for land valuation is given, but no cost figures are included. 3c. Sitework costs are given for some site improvements. 3d. A 5% cost for contingencies is included. 3e. A separate schedule of architect fees based upon project cost is given.
No	No (4c)	Yes/ No (4d)	Yes	No	No	Yes	Yes	4a. Unit-in-place costs are given for a few selected miscellaneous items only. 4b. Component depreciation can be calculated from building systems costs given in case histories. 4c. Sitework costs are included in case histories only. 4d. Builder's profit is not included in cost figures; only builder's administrative overhead & supervision.
No	No (5b)	Yes	No	No	No	Yes	Yes	5a. Comparative unit costs (sq.ft.) are given for structure, plumbing, HVAC, electrical and miscellaneous categories only. Comparative unit costs (sq.ft.) are also given by building sytems in 12 case histories 5b. Segregated sitework costs are included in the case histories only.
No	No (6c)	Yes	No	No	Yes (6d)	Yes	No	6a. Unit-in-Place (systems) costs are given for foundations, superstructures, exterior walls, roofing, partitions, interior wall finish, floor finish, ceilings only; other improvement costs taken from average costs table. 6b. An estimate based on detailed assembly costs would be less detailed than a complete quantity survey based estimate. 6c. Sitework costs are included in average cost section through 1978 edition. 6d. Labor/materials are segregated for unit-in-place systems costs only.
No	No (7b)	No	No	No	Yes	Yes	No	7a. Component depreciation could be calculated from a detailed quantity survey. 7b. Quantity survey sitework costs are included for drainage, utilities, paving & surfacing, landscaping, and site improvements.

SOURCES				CONTENT ORGANIZATION							
				DESCRIPTION OF COST DATA							
				Method			Uses				
NAME OF DATA SOURCE	Publisher's Address	Initial Cost 1st Year	Frequency of Publication	Comparative Unit Sq. ft. + Cu.Ft.	Unit (Component System)-in-Place	Quantity Survey	Valuation	Initial Estimate	Intermediate Estimate	Detailed Estimate	Calculation of Component Depreciation
MARSHALL VALUATION SERVICE	Marshall & Swift Publication Co. 1617 Beverly Blvd. Los Angeles, California 90026	$75.00 Includes monthly supplement	$65.00 Also includes monthly supplement	Yes	Yes (8a)	No	Yes	Yes	Yes	No	Yes
RESIDENTIAL COST HANDBOOK	Marshall & Swift Publication Co. 1617 Beverly Blvd. Los Angeles, California 90026	$33.00 Includes quarterly supplement & up-date services	$29.00 Includes quarterly suppliment & up-date services	Yes	Yes (9a)	No	Yes	Yes	Yes	No	Yes
BUILDING CONSTRUCTION COST DATA	Robert Snow Means Company, Inc. Construction Consultants and Publishers 100 Construction Plaza Duxbury, Mass. 02332	$22.50	New Edition Annually	Yes	No (10a)	Yes	No	Yes (10b)	No	Yes	Yes (10c)
BUILDING SYSTEMS COST GUIDE	Robert Snow Means Company, Inc. Construction Consultants and Publishers 100 Construction Plaza Duxbury, Mass. 02332	$27.50	New Edition Annually	Yes	Yes	No	No	Yes	Yes	Yes (11a)	Yes (11b)
CURRENT CONSTRUCTION COSTS	Lee Saylor, Inc. Consulting Cost Engineers 1855 Olympic Blvd., Suite 110 Walnut Creek, California 94596	$23.95	New Edition Annually	No	No	Yes	No	No	No	Yes (12a)	Yes (12b)

PROJECT ITEMS INCLUDED IN COST DATA						ADJUSTMENTS		SELECTED SPECIAL FEATURES
Land Costs	Sitework	General Contractor Overhead & Profit	Architect/Engineer Fee	Construction Financing Costs	Labor Cost Segregated From Material Costs	Location Modifier	Time Modifier	
No	No (8b)	Yes	Yes (8c)	Yes (8d)	No	Yes	Yes	8a. Unit-in-place costs are given for foundations, framing, floors, interior construction, HVAC, electrical, plumbing, fire protection, roofs, walls, refrigeration, conveyances and miscellaneous equipment. 8b. Sitework costs are given for some site improvements. 8c. Architect's fees are included in compartive units costs (calculator method),but are not included in unit-in-place (segregated cost method) costs. A schedule of architect's fees based upon project cost is given. 8d. Included in construction costs are construction financing costs except for discounts & bonuses paid for financing.
No	No (9b)	Yes	Yes (9c)	Yes (9d)	No	Yes	Yes	9a. Unit-in-place (components)costs are given for roofs, walls, HVAC, ceilings, floors,electrical, plumbing, & fireplaces. 9b. Sitework costs are given for some street, utility, and yard improvements. 9c. Architect's fees are included in comparative unit costs, but are not included in component or unit-in-place costs. A schedule of architect's fees based upon project quality is given. 9d. Included in construction costs are construction financing costs except for discounts and bonuses paid for financing.
No	No (10d)	Yes (10e)	No (10f)	No	Yes (10g)	Yes	Yes (10h)	10a. Selected building components are categorized by trades, with costs given in comparative unit cost section. 10b. Use comparative unit cost section (sq.ft. and cubic ft.building costs)for quick estimates. 10c. Component depreciation could be calculated from a detailed quantity survey. 10d. Quantity survey sitework costs are included for drainage,utilities,roads,walks,fences,playgrounds, fountains,athletic facilites, and landscaping. Segregated sitework costs are given for some building types in comparative unit cost section. 10e. Builder's (general contractor) overhead & profit must be added to quantity survey costs; comparative unit costs include builder's overhead & profit. A schedule is included for builder's overhead & profit as % of project cost. 10f. A schedule of architect's & engineer's fees as % of project cost is given in the manual. 10g. Labor/material costs are segregated in the quantity survey section only. 10h. Historical cost indexes are included to determine quarterly construction cost changes.
No	No (11c)	No	No (11d)	No	No (11e)	Yes	Yes (11f)	11a. An estimate based on detailed assembly cost would be less detailed than a complete quantity survey based estimate. 11b. Component depreciation figures can be compiled from costs given in systems section. In comparative unit cost section, selected building component costs are segregated. 11c. Sitework systems costs are given for roads, parking lots,utilities. Segregated sitework costs are given for some building types in comparative unit cost section. 11d. A schedule of architect's fees is given as a % of project cost by building type in manual. 11e. Installation costs are segregated from material costs for some systems,ie.walls,doors & windows. 11f. Historical cost indexes are included to determine quarterly construction cost changes.
No	Yes (12c)	Yes	No (12d)	No	Yes	Yes	Yes	12a. Where a trade requires several types of materials to make a final item (ie. paving) in-place costs as well as detailed breakdown of costs are included. 12b. Component depreciation could be calculated from a detailed quantity survey. 12c. Quantity survey sitework costs are included for utilities, drainage, paving, sidewalks,landscaping, fencing, and athletic facilities. 12d. On-site construction permits are included in a separate section titled General Conditions.

SOURCES				CONTENT ORGANIZATION							
				DESCRIPTION OF COST DATA							
				Method					Uses		
NAME OF DATA SOURCE	Publisher's Address	Initial Cost 1st Year	Frequency of Publication	Comparative Unit Sq.Ft. + Cu.Ft.	Unit (Component System)-In-Place	Quantity Survey	Valuation	Initial Estimate	Intermediate Estimate	Detailed Estimate	Calculation of Component Depreciation
DOLLAR AND CENTS OF SHOPPING CENTERS	Urban Land Institute 1200 18th St, N.W. Washington, D.C. 20036	$49.25	New Edition Published Every Three Years	Yes	No	No	No	Yes	No	No	No
BUILDING COST FILE UNIT PRICES 4 editions available: Eastern, Central Southern, Western	Van Nostrand Reinhold Company 135 West 50th St. New York, N.Y. 10020 To order: 7625 Empire Drive Florence, Kentucky 41042	$25.95	New Edition Published Annually	No	No	Yes	No	No	No	Yes	Yes (14a)
DESIGN COST FILE	Van Nostrand Reinhold Company 135 West 50th St. New York, N.Y. 10020 To order: 7625 Empire Drive Florence, Kentucky 41042	$29.95	New Edition Published Annually	No	Yes	No	No	No (15a)	Yes	Yes (15b)	Yes (15c)
ENGELSMAN'S GENERAL CONSTRUCTION COST GUIDE	Van Nostrand Reinhold Company 135 West 50th St. New York, N.Y. 10020 To order: 7625 Empire Drive Florence, Kentucky 41042	$27.50	New Edition Published Annually	No	No	Yes	No	No	No	Yes	Yes (16a)
REAL ESTATE VALUATION COST FILE	Van Nostrand Reinhold Company 135 West 50th St. New York, N.Y. 10020 To order: 7625 Empire Drive Florence, Kentucky 41042	$29.95	New Edition Published Annually	Yes	No	No	Yes	Yes	No	No	No
RESIDENTIAL COST MANUAL	Van Nostrand Reinhold Company 135 West 50th St. New York, N.Y. 10020 To order: 7625 Empire Drive Florence, Kentucky 41042	$28.95	New Edition Published Annually	Yes (18a)	No	Yes	Yes (18a)	No	No	Yes	Yes (18b)

PROJECT ITEMS INCLUDED IN COST DATA						ADJUSTMENTS		SELECTED SPECIAL FEATURES
Land Costs	Sitework	General Contractor Overhead & Profit	Architect/Engineer Fee	Construction Financing Costs	Labor Cost Segregated From Material Costs	Location Modifier	Time Modifier	
Yes	Yes (13a)	Yes	Yes	Yes	No	No	No	13a. The site improvement cost includes both on-site and off-site improvements.
No	No (14b)	No	No	No	Yes	Yes	No	14a. Component depreciation could be calculated from a detailed quantity survey. 14b. Quantity survey sitework costs are given for drainage, utilities, paving, surfacing, fencing, athletic facilities, retaining walls, and landscaping.
No	No	No	No	No	No	Yes	No	15a. An initial estimate can be made by summing system costs if the building design & systems are well defined. 15b. An estimate based on detailed assembly costs would be less detailed than a complete quantity survey based estimate. 15c. Component depreciation could be calculated from detailed building system costs.
No	No (16b)	No	No	No	Yes	Yes	Yes	16a. Component depreciation could be calculated from a detailed quantity survey. 16b. Quantity survey sitework costs are given for drainage, utilities, paving, athelitic facilities, paving, fencing, and landscaping.
No	No (17a)	Yes	Yes	No	No	Yes	No	17a. In Miscellaneous Cost Items section, comparative unit sitework costs are given for athelic facilities, parking, fencing, landscaping, incinerators, paving, and retaining walls.
No	Yes	No (18c)	No (18d)	No	Yes	Yes	No	18a. Part 3: Valuation Section includes comparative unit costs for houses and apartments which are adjusted by shape, height, and size factors. 18b. Component depreciation could be calculated from a detailed quantity survey. 18c. General overhead items are included in a seperate schedule for reference. 18d. Architect's and engineer's fees are included as part of general overhead.

SOURCES						
NAME OF DATA SOURCE	Publishers' Address	Initial Cost 1st Year	Frequency of Publication	Income Categories	Expense Categories	Statistics Used (Median / Range / Average)
DOWNTOWN AND SUBURBAN OFFICE BUILDING EXPERIENCE EXCHANGE REPORT	Building Owners and Managers Association International 1221 Massachusetts Avenue, N.W. Washington, D.C. 20005	$95.00	New Edition Published Annually	Office Store Storage Special	Variable Operating Fixed Operating Tenant Improvement Allowance Leasing Expense Depreciation	Average
INCOME/EXPENSE ANALYSIS APARTMENTS	Institute of Real Estate Management 430 North Michigan Chicago, Illinois 60611	$45.00	New Edition Published Annually	Apartments Garage/Parking Store/Office	Administrative Utilities Building Services Maintenance R.E. Taxes Insurance Amenities	Median & Range
EXPENSE ANALYSIS CONDOMINIUMS, COOPERATIVES, AND PLANNED UNIT DEVELOPMENT	Institute of Real Estate Management 430 North Michigan Chicago, Illinois 60611	$20.00	New Edition Published Annually	None	Administrative Utilities Building Services Maintenance R.E. Taxes Insurance Leased Recrational Facilities	Median & Range
INCOME/EXPENSE ANALYSIS SUBURBAN OFFICE BUILDINGS	Institute of Real Estate Management 430 North Michigan Chicago, Illinois 60611	$30.00	New Edition Published Annually.	Office Storage Retail Parking Escalator Clauses	Administrative Maintenance Utilities R.E. Taxes Insurance	Median & Range
THE DOLLAR AND CENTS OF SHOPPING CENTERS	Urban Land Institute 1200 18th, N.W. Washington, D.C. 20036	$49.25	New Edition Published Every Three Years	Base Rent Overage Common Area Charges	Maintenance Central Utility System Advertising & Promotion R.E. Taxes Insurance Administrative Depreciation Debt Service	Median & Deciles

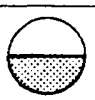
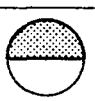
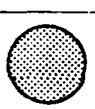
CONTENT ORGANIZATION									SELECTED SPECIAL FEATURES
Occupancy & Vacancy Data	Trend Analysis	Type of Development	Size in Square Feet	Location Categories	Age of Building	Rental or Price Range	Number of Stories	City Size	
Yes	Detailed 1973-77 compared by several attributes ..... National Values	Offices Downtown Suburban including Government & Medical	Yes	City Region Nation	Yes	None	Yes	Yes	1. Economic analysis of office building industry. 2. Operating cost breakdown by region, size, age & height for suburban & downtown offices. 3. Energy analysis for downtown, suburban, & government offices by size, age, region, age, and height. 4. Data summary & operating ratios by organizational category.
Yes	Detailed 1974-77 by building type ..... National Values	Apartments Lo-Rise 12-24 units Lo-Rise 25+ units Elevator Garden Unfurnished Furnished	No	City Metropolitan Area Region Nation	Yes	Rental Range	No	No	1. Graphic summary of income & expenses by development type. 2. Tenant turnover rates by development type. 3. Summary of distribution of income & expenses by building type expressed in dollars per room & percentage of gross income.
No	No	Condominiums Cooperatives Planned Unit Developments	No	Metropolitan Area Region	Yes	Price Range	No	No	1. Kinds of amenities furnished by owners association. 2. Breakdown of utility expenses between unit and owners' association by unit price range and building age.
Yes	1976 & 1977 by regions ..... Regional Values	Offices Suburban	Yes	Metropolitan Area Region Nation	Yes	Rental Range	Yes	No	1. Energy analysis for suburban offices by region and age. 2. Data summary & operating ratios by organizational category. 3. National & regional graphic summary of income, expenses, & total actual collections.
No	1975 & 1978 by shopping center type ..... National Values	Shopping Centers Super regional Regional Community Neighborhood	Yes	Region Nation	Yes	Yes	No	No	1. Tenant space needs, base rent, sales, & common area charges for 120 types of tenants in each center type. 2. Center operating receipts, expenses, & net operating income as a % of capital costs. 3. Energy sales & distribution methods by center type. 4. Analysis of Operations of enclosed & non-enclosed malls. 5. Analysis of capital costs by center type.

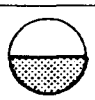
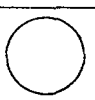
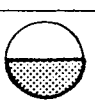
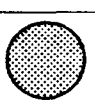
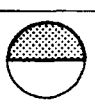
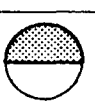
APPENDIX:

Legend: Refer to Page X.1

A - DECISION MODELS: INITIAL PROJECT ANALYSIS

NAME OF DATA SOURCE	PROJECT DEVELOPMENT CATEGORY	SUITABILITY FOR USE IN ANALYSIS Content/Fit	COMPARATIVE COSTS - analyzed on the basis of: BUILDING TYPE & SIZE
BOECKH BUILDING VALUATION MANUAL	Apartmt. Office Retail	◓	The data is presented in a form which includes building component descriptions and costs for specific designs. The comprehensive design and cost data is best applied in advanced project analysis.
BOECKH COMMERCIAL BUILDING COST GUIDE	Apartmt. Office Retail	◒	The data requires design decisions on building exterior and ground floor area to select appropriate cost figures. The data applies to intermediate project analysis.
DODGE BUILDING COST CALCULATOR AND VALUATION GUIDE	Apartmt. Office Retail	◒	A limited selection of hisorical case studies are included for each building category which could prove helpful in identifying initial project costs. The data requires design decision on building exterior and quality class to select appropriate cost figures. The data applies to intermediate project analysis.
DODGE CONSTRUCTION SYSTEMS COST GUIDE	Apartmt. Office Retail	●	The average building cost section provides a range of construction costs for various project types.
DODGE DIGEST OF BUILDING COSTS AND SPECIFICATIONS	Apartmt. Office Retail Shop.Cntr.	○	Data requires initial design decisions before comparison with specific case study references. The data applies to intermediate project analysis.
RESIDENTIAL COST HANDBOOK	Apartmt.	◓	The data requires design decisions on building type, size, and quality to select appropriate cost figures. The data applies to intermediate project analysis.
MARSHALL VALUATION SERVICE	Apartmt. Office Retail	◓	The Cost Calculator Method data requires design decisions on building type and quality to select appropriate cost figures.
MEANS BUILDING CONSTRUCTION COST DATA	Apartmt. Office Retail	●	Section 17 can be very useful for developing initial cost estimates for particular property types.
MEANS BUILDING SYSTEM COST GUIDE	Apartmt. Office Retail	●	Section 14 can be very useful for developing initial cost estimates for particular property types
DOLLARS AND CENTS OF SHOPPING CENTERS	Shop.Cntr.	●	A range of average building and project cost data, for different shopping center size categories, appropriate only for the initial project analysis. This manual provides complete project cost data which can be directly used in the Project-to-Building Ratio.
REAL ESTATE VALUATION COST FILE	Apartmt. Office Retail	◓	The data applies to intermediate project analysis. The data requires design decisions on building types, size, and quality to select appropriate cost figures.

B - DECISION MODELS: INTERMEDIATE PROJECT ANALYSIS	
SUITABILITY FOR USE IN ANALYSIS Content/Fit	- COMPONENT DESCRIPTION AND QUALITY FACTORS - analyzed on the basis of: BUILDING TYPE, SIZE, AND QUALITY
	The data is presented in a form which includes building component descriptions and costs for specific designs. The comprehensive design and cost data is best applied in advanced project analysis.
	The data scope is limited because building quality is indicated only by exterior facade and ground floor area. The building cost/sq.ft. of ground floor area must be converted to cost/sq.ft. of gross building area when a multi-story building is being analyzed.
	The data allows strong quality typing by exterior facade and quality class description.
	In the Average Building Cost Section, the data includes construction cost ranges that are not related to quality distinctions. The data is most suitable for use in project analysis.
	Data is presented from actual construction contracts for quick reference to similar jobs and specific locations. No definition of building quality is included with case study costs.
	The data allows strong quality typing by floor area and quality class description.
	The cost calculator method data is categorized by structural type and quality characteristics which makes it very appropriate for the intermediate analysis. The segregated cost method requires too many detailed design decisions to be appropriate for the intermediate project analysis models.
	The cost ranges identified in section 17 are not related to quality distinctions. The quantity survey data is so design specific in sections 1-16 that it exceeds the scope of the intermediate and advanced project analysis models.
	The unit-in-place data is so design specific in section 1-12 that it exceeds the scope of the intermediate and advanced project analysis models.
	A range of average building and project cost data, for different shopping center size categories, appropriate only for the initial project analysis. This operations data manual provides only introductory cost data.
	The data allows strong quality typing by component description and quality classification. The data applies to intermediate project analysis.

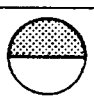
C - DECISION MODELS: ADVANCED PROJECT ANALYSIS	
SUITABILITY FOR USE IN ANALYSIS Content/Fit	INTER CHANGEABLE COMPONENTS & DESIGN FACTORS - analyzed on the basis of: BUILDING TYPE, SIZE, QUALITY, & ALTERNATIVE COMPONENTS/SYSTEMS
	The segregated cost data allows estimates to be made with a consideration of specific design and cost trade offs. This comprehensive design and cost data best meets the needs of the advanced project analysis models.
	No alternative building components other than building facades are included. The building cost/sq.ft. of ground floor area must be converted to cost/sq.ft. of gross building area when a multi-story building is being analyzed.
	The data includes limited alternative component adjustments for selected items. The data applies to intermediate project analysis.
	The systems data is appropriate for estimating alternative components with the exception of HVAC. The data is most suitable for use in initial project analysis.
	Alternative building component decisions are difficult to establish from comparable based case studies. The data applies to intermediate project analysis.
	The segregated cost data allows estimates to be made with a consideration of specific design and cost trade offs. The data applies to intermediate project analysis.
	The segregated cost data allows estimates to be made with a consideration of specific design and cost trade offs. This data best meets the needs of the advanced project analysis models.
	The quantity survey data is so design specific in sections 1-16 that it exceeds the scope of the intermediate and advanced project analysis models.
	The unit-in-place data is so design specific in sections 1-12 that it exceeds the scope of the intermediate and advanced project analysis models.
	A range of average building and project cost data, for different shopping center size categories, appropriate only for the initial project analysis. This operations data manual provides only introductory cost data.
	The components are arranged into building quality classes and are not individually estimated. This makes the data inappropriate for advanced project analysis.

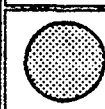
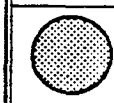
NAME OF DATA SOURCE	PROJECT DEVELOPMENT CATEGORY	A - DECISION MODELS: INITIAL PROJECT ANALYSIS	
		SUITABILITY FOR USE IN ANALYSIS Content/Fit	MARKET REVENUE AND SPACE ALLOCATION
BOMA DOWNTOWN AND SUBURBAN OFFICE BUILDING EXPERIENCE EXCHANGE REPORT	Office Limited Retail		Average Revenue Data (collected during previous calendar year) is provided for selected downtown and suburban metropolitan areas. Revenue data, in the Downtown and Suburban statistical tables, is organized by building size, age, story height, and city size. All data is presented in cents per square foot of total rentable area(office and retail space), total rentable office area, and actually rented office area. If the proposed project is exclusively rental office space, then select appropriate rental data from the "Office Total" (total rentable office area) column. The total number of buildings and their cumulative square feet of rentable area, included in the statistical tables, are important items to note in determining the usefulness of the data for a particular metropolitan area. Revenue data should be considered only as an advisory number useful in initiating the first project analysis.
IREM INCOME/EXPENSE ANALYSIS APARTMENTS	Apartmt.		Median revenue data (as well as low and high quartile ranges for large sample sizes) are provided for selected metropolitan areas, regions, and age group; as well as organized by furnished and unfurnished apartment buildings. Data is presented for elevator, low rise 12-24 units, low rise 25 or more units, and garden type buildings. The total number of apartment buildings and their cummulative square feet of rentable area included in the statistical tables are important items to note in determining the usefulness of the data for particular metropolitan areas. Revenue data should be considered only as an advisory number useful in inetating the first project analysis.

B - DECISION MODELS: INTERMEDIATE PROJECT ANALYSIS

SUITABILITY FOR USE IN ANALYSIS Content/Fit	MARKET VACANCY AND OPERATING EXPENSE ESTIMATES
	The vacancy data included in the "Survey of Office Space Occupancy" is collected from a larger sample of buildings than the downtown and suburban statistical tables. The "Office Space Occupancy" survey provides more reliable indications of vacancy than those found in the data charts organized by city, city size, building size, age, and story height. The expense line items are averages that should be analyzed individually and adjusted for local market conditions. The summing of all average expense items without adjustment will generate an inflated project operating expense statement. Expense data, in the Downtown and Suburban Statistical Tables, is organized by building size, age, story height, and city size. All data is presented in cents per square foot of total rentable area (office and retail space), total rentable office area, and actually rented office area. If the proposed project is exclusively rental office space, then select appropriate operating expense data from the "Office Total" (total rentable office area) column. The total number of buildings and their cumulative square feet of rentable area, included in the statistical tables, are important items to note in determining the usefulness of the data for a particular metropolitan area. This manual of historical operating expense data can be used to verify estimates of up-to-date local operating expense data. The size and character of the manual survey sample may give incomplete indications of local market supply /demand forces, current lease terms, or particular project management strategies.
	The vacancy data included in the "Trend Analysis" section provides an indication of vacancy nationwide by building type. The vacancy data found in the metropolitan statistical tables are samples from selected metropolitan areas. Careful attention should be given to sample size and the number of apartment buildings, apartment units, and rentable square feet before making a judgement about apartment vacancy in a specific metropolitan area. Current, locally collected data for compettitve rental space should be used in the intermediate models when possible. The expense line items are medians, (with low and high quartile ranges for large sample sizes) atated as a percentage of Gross Possible Income and in dollars per square foot of rentable area. This data should be adjusted for lacal market conditions. The summing of all expense items vertically without adjustment will generate an inflated project operating expense statement. Be aware that expenses are listed as a percentage of Gross Possible Income. This income includes miscellaneous revenue from garage/parking and store/offices rental. If the proposed project is exclusively rental apartment space, then expenses as a percentage of Gross Possible Income must be adjusted to a Rent-Apartments. This manual of historical operating expense data can be used to verify estimates of up-to-date local operating expense data. The size and character of the manual survey sample may give incomplete indications of local market supply/demand forces, current lease terms, or particular project management strategies.

C - DECISION MODELS: ADVANCED PROJECT ANALYSIS

SUITABILITY FOR USE IN ANALYSIS Content/Fit	MARKET VACANCY AND OPERATION EXPENSE VERIFICATION
	This manual of historical operating expense data can be used to verify estimates of up-to-date local operating expense data. The size and character of the manual survey sample may give incomplete indications of local market supply/ demand forces, current lease terms, or particular project management strategies.
	This manual of historical operating expense data can be used to verify estimates of up-to-date local operating expense data. The size and character of the manual survey sample may give incomplete indication of local market supply/ demand forces, current lease terms, or particular project management strategies.

NAME OF DATA SOURCE	PROJECT DEVELOPMENT CATEGORY	A - DECISION MODELS: INITIAL PROJECT ANALYSIS	
		SUITABILITY FOR USE IN ANALYSIS Content/Fit	MARKET REVENUE AND SPACE ALLOCATION
IREM INCOME/EXPENSE ANALYSIS SUBURBAN OFFICE BUILDINGS	Office		Revenue is presented in dollars per square feet of Gross Area of Building, Gross Rentable Office Area, and Net Rentable Office Area. The appropriate revenue data used in the initial models depends on whether floor areas are to be leased by single or multiple tenants. Median revenue data (and low and high quartile ranges for large sample sizes) is provided for selected suburban metropolitan areas and regions according to building size, age group, rental range, and building type. Revenue data appropriate for the initial project analysis is found under the heading "Income" for the "Offices" line item. Miscellaneous income would be excluded when project design calls for exclusive office rental space. Revenue data should be considered only as an advisory number useful as a starting point for the initial project analysis.
ULI DOLLARS & CENTS OF SHOPPING CENTERS	Shopping Centers		Revenue data (collected every third year) is provided for neighborhood, community, regional, and super regional shopping centers. The revenue data is presented by dollars per square foot of "Gross Leaseable Area" and as a "Percentage of Total Receipts." The revenue data is reported as medians with lower and upper deciles. All data is presented in dollars per square foot of Gross Leasable Area which includes all areas leased by the center owner. (including department stores owned by the center) "Total Operating Receipts" is the appropriate revenue data to use in the initial project analysis model. It is found in the statistical tables by shopping center type, age, and region. Revenue data from the "Operating Results" table should be considered only as an advisory number useful as a starting point for the initial project analysis. In more advanced analysis models, particular tenant composition and the resulting rent structure will give a more accurate indication of possible revenues for the proposed project.

B - DECISION MODELS: INTERMEDIATE PROJECT ANALYSIS	
SUITABILITY FOR USE IN ANALYSIS Content/Fit	MARKET VACANCY AND OPERATING EXPENSE ESTIMATES
	The vacancy data included in the "Trend Analysis" section provides an indication of suburban office building vacancy nationwide for the year. The vacancy data found in the suburban metropolitan statistical tables is reported as of December 31, of preceeding year. Careful attention should be given to sample size and the number of office buildings and their cumulative square feet of rentable area before making a judgement about office building vacancy in the particular suburban metropolitan area. Current local collected vacancy data for competitive rentable space should be used in the intermediate models when possible. If the proposed project is exclusively rental office space, then select appropriate operating expense data from the Gross Rentable Office Area or Net Rentable Office area The total number of buildings and their cumulative square feet of rentable area included in the statistical tables are important items to note in determining the usefulness of the data for a particular suburban metropolitan area.
	Operating expense data (collected every third year) is provided for neighborhood, community, regional, and super regional shopping centers. The expense data is presented by dollars per square foot of "Gross Leasable Area" and as a 'Percentage of Total Receipts." The expense data is reported as medians, with lower and higher deciles. Vacancy data is not included as a segregated item. Tenant information is given for low and high total rent charges to facilitate estimation of tenant composition and the resulting rent structure for the proposed project in the intermediate analysis. The specific revenue and expense data for the four shopping center categories is summarized in the "Operating Results" tables. Data is analyzed by region and shopping center age groups.

C - DECISION MODELS: ADVANCED PROJECT ANALYSIS	
SUITABILITY FOR USE IN ANALYSIS Content/Fit	MARKET VACANCY AND OPERATING EXPENSE VERIFICATION
	This manual of historical operating expense data can be used to verify estimates of up-to-date local operating expense data for suburban office buildings. The size and character of the manual survey sample may not give adequate indications of local market supply/demand forces, current lease terms, or particular project management strategies.
	Debt service is included in the "Operating Results" tables. This data is inaporopiate for the advance project analysis models which generate their own annual debt service estimates for the project. "Detailed Tenant Information Tables", for different center categories, indicate the base rental rate, percentage (overage) rent, and common area charges that equal the total revenue expected per square foot of Gross Leaseable Area for each type of possible tenant. The frequency of occupancy and the median size of leased area for different tenants can be found in the "Summary of Tenant Information Tables". This manual of historical operating revenue and expense data can be used to verify estimates of up-to-date local shopping center revenue and expense data. The size and character of the manual may not give adequate indications of local market supply/demand forces, current lease terms, or particular project management strategies. (These factors are considered in the advanced project analysis process when tenant composition for the center has been tentatively identified.)

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INVESTMENT BULLETIN

April 24, 1981 No. 820

MORTGAGE COMMITMENTS ON MULTIFAMILY AND NONRESIDENTIAL PROPERTIES REPORTED BY 20 LIFE INSURANCE COMPANIES FOURTH QUARTER 1980 AND ANNUAL DATA

Reporting companies account for 67% of nonfarm mortgages and 61% of total assets held by U. S. life insurance companies.

The attached tables provide the results for the fourth quarter of 1980 from the survey of mortgage commitments made on income properties by 20 life insurance companies. Annual data appear in Table 1, Table 4, Table A, Table B, and Table L.

Flexible lending terms continued to be emphasized in commitments made in the fourth quarter of 1980. Loans with provision for income or equity participation, renegotiable rates, maturities of 10 years or less, or a lender's call option accounted for nearly 90% of fourth-quarter commitments. (The ratio reflects adjustments to eliminate double-counting of loans with more than one feature.)

As shown in Table 3, loans with provision for income/equity returns or renegotiable rates accounted for 53% of the number and 75% of the amount committed in the final quarter of 1980, even larger shares than in the preceding quarter (see Investment Bulletin No. 818). Loans with final maturities of 10 years or less again represented some 30% of the number of loans, in contrast with a scant 5% share in the final quarter of 1979. With this emphasis on variable returns and shorter maturities, use of a lender's call option occurred less frequently than was found in 1979 commitments, but the option was exercisable much sooner in loan life than prevailed a year earlier (Table E and comparable earlier tables).

For the first time in these surveys, information is included on nonrefundable fees received in connection with some loan commitments (see footnotes to Table 3, Table D, and Table M). Such fees, which have long been utilized by some lenders, are at times associated with a lower contract rate than otherwise would have been required. The presence of nonrefundable fees and other yield-affecting features are important to any assessment of contract rates. The surveys, however, do not attempt to measure potential yields of the reported commitments, in part because the yield is highly uncertain. Moreover, some commitments may not be funded or may be funded at terms different from those set at commitment.

Table L

Commitments of $100,000 and Over on Multifamily and Nonresidential Mortgages Made by 20 Life Insurance Companies

Property Type, Year 1980

Property Type	No. of Loans	Amount Committed ($000)	Loan Amount ($000)	Interest Rate (by #)	Interest Rate (by $)	Loan/ Value	Capitalization Rate	Debt Coverage	Percent Constant	Term (Years/Months)	Percentage Distribution by loan amount
Conventional Elevator Apartment	7	18,100	2,586	12.39%	12.53%	61.0%	10.1%	1.17	13.1%	14/3	0.4%
Conventional Nonelevator Apartment	21	91,145	4,340	12.52	12.55	74.4	11.8	1.25	13.0	13/7	2.2
Retail - less than 5 stores	9	20,102	2,234	12.76	12.80	72.7	11.6	1.25	13.2	18/2	0.5
Shopping Center - 5 or more stores[1/]	39	189,897	4,869	12.61	12.61	71.6	12.0	1.29	12.8	15/8	4.5
Supermarket	7	31,252	4,465	12.89	12.80	97.4	13.6	1.03	13.8	22/10	0.7
Department Store	5	38,800	7,760	12.00	12.00	100.0	13.9	1.09	12.8	25/0	0.9
Office Building[2/]	240	2,524,388	10,518	12.59	12.45	73.2	11.9	1.27	12.9	18/8	60.4
Medical Office Building[1/]	20	36,810	1,840	12.74	12.87	73.9	12.3	1.26	13.2	18/10	0.9
Parking Garage	2	4,075	2,038	*	*	*	*	*	*	*	0.1
Service Station	1	1,000	1,000	*	*	*	*	*	*	*	**
Restaurant	3	8,795	2,932	13.04	12.41	88.5	11.6	0.92	14.7	18/4	0.2
Commercial Warehouse[1/]	71	143,521	2,021	12.64	12.42	71.3	11.5	1.23	13.1	13/8	3.4
Truck Terminal	1	1,500	1,500	*	*	*	*	*	*	*	**
Other Commercial	4	10,675	2,669	13.16	13.53	69.7	12.7	1.28	14.4	13/6	0.3
Educational	1	350	350	*	*	*	*	*	*	*	**
Hospital and Institutional	2	2,968	1,484	*	*	*	*	*	*	*	0.1
Social and Recreational	3	4,130	1,377	13.42	13.65	58.9	13.5	1.24	14.8	11/8	0.1
Industrial Warehouse[3/]	149	285,381	1,915	12.85	12.43	73.8	12.4	1.26	13.2	21/6	6.8
Manufacturing Plant	10	10,010	1,001	12.88	12.82	72.2	11.8	1.23	13.3	17/2	0.2
Other Industrial	21	46,710	2,224	12.68	12.99	73.5	12.6	1.33	13.0	26/5	1.1
Hotel	32	635,050	19,845	12.75	12.66	72.0	13.1	1.39	13.2	16/11	15.2
Motel	4	36,200	9,050	12.88	11.86	66.3	13.0	1.57	13.2	10/6	0.9
Multiple Property Complex	4	39,430	9,858	12.56	12.47	74.8	11.9	1.24	12.8	22/6	0.9
TOTAL	656	4,180,289	6,372	12.69	12.42	73.3	12.1	1.27	13.1	18/6	100.0

*Data not shown where there are fewer than three loans.
**Less than 0.05%.

1/ Interest rate was not available for one loan.
2/ Interest rate was not available for two loans.
3/ Interest rate was not available for six loans.

Note: Averages for capitalization rate, debt coverage ratio, and percent constant may represent a fewer number of loans than the total for the specified category.

Table M

Commitments of $100,000 and Over on Multifamily and Nonresidential Mortgages Made by 20 Life Insurance Companies

Loan Size Class Within Major Property Type, Fourth Quarter, 1980

Major Property Type Loan Size	No. of Loans	Amount Committed ($000)	Averages: Loan Amount ($000)	Interest Rate (by #)	Interest Rate (by $)	Loan/ Value	Capitalization Rate	Debt Coverage	Percent Constant	Term (Years/Months)
APARTMENT - CONVENTIONAL	11	33,570	3,052	12.41%	12.45%	66.5%	11.3%	1.23	13.3%	13/2
Less than $1 million	1	940	940	*	*	*	*	-	-	*
$1 million - $3,999(000)	6	11,980	1,997	12.67	12.64	59.4	11.0	1.19	14.0	13/4
$4 million - $7,999(000)	4	20,650	5,162	12.38	12.41	74.9	11.9	1.26	12.7	15/0
COMMERCIAL RETAIL	11	33,478	3,043	13.02	12.93	73.2	12.2	1.26	13.3	11/4
$1 million - $3,999(000)	8	18,343	2,293	13.00	12.83	72.6	12.2	1.27	13.4	11/10
$4 million - $7,999(000)	3	15,135	5,045	13.08	13.05	74.6	12.1	1.22	13.2	10/0
OFFICE BUILDING[2/]	82	713,129	8,697	13.01	12.92	71.5	12.1	1.28	13.3	17/3
Less than $1 million	8	5,420	678	13.98	13.95	69.8	13.3	1.39	14.7	15/0
$1 million - $3,999(000)	28	63,154	2,256	13.15	13.04	72.3	12.6	1.29	13.5	15/8
$4 million - $7,999(000)	23	134,550	5,850	12.82	12.81	71.0	11.8	1.28	13.1	19/7
$8 million and over	23	510,005	22,174	12.72	12.92	71.5	11.4	1.23	12.9	17/7
COMMERCIAL SERVICE[1/]	19	35,966	1,893	13.19	13.02	70.1	11.6	1.21	13.6	13/6
Less than $1 million	3	1,381	460	14.00	14.27	70.8	12.6	1.26	14.2	5/8
$1 million - $3,999(000)	15	27,185	1,812	13.07	13.10	69.3	11.4	1.20	13.5	15/0
$4 million - $7,999(000)	1	7,400	7,400	*	*	*	*	*	*	*
INSTITUTIONAL AND RECREATIONAL	1	150	150	*	*	*	-	-	-	*
INDUSTRIAL[3/]	32	55,566	1,736	13.31	13.30	74.0	12.9	1.29	13.7	20/3
Less than $1 million	14	9,056	647	13.31	13.30	73.9	13.4	1.34	13.7	20/3
$1 million - $3,999(000)	16	33,360	2,085	13.36	13.45	74.1	12.4	1.23	13.7	19/10
$4 million - $7,999(000)	2	13,150	6,575	*	*	*	*	*	*	*
HOTEL AND MOTEL	8	114,400	14,300	12.92	12.75	70.9	13.0	1.39	13.3	17/6
$1 million - $3,999(000)	2	5,100	2,550	*	*	*	*	*	*	*
$4 million - $7,999(000)	1	4,000	4,000	*	*	*	*	*	*	*
$8 million and over	5	105,300	21,060	12.65	12.70	72.0	13.2	1.43	13.1	19/0
MULTIPLE PROPERTY COMPLEX	1	6,675	6,675	*	*	*	*	*	*	*
TOTAL	165	992,934	6,018	13.04	12.90	71.6	12.2	1.28	13.4	16/8

*Data not shown where there are fewer than three loans.

1/ Interest rate was not available for one loan.
2/ Interest rate was not available for two loans.
3/ Interest rate was not available for five loans.

Note: Averages for capitalization rate, debt coverage ratio, and percent constant may represent a fewer number of loans than the total for the specified category. Nonrefundable fees were reported in connection with 26% of the number and 22% of the amount committed. The comparable shares by property type ran: 64% and 70% for apartments, 36% and 42% for retail stores, 27% and 21% for office buildings, 32% and 29% for commercial service properties, 6% and 4% for industrial properties, and 25% and 14% for hotels and motels. See note to Table D.

TABLE OF CONTENTS

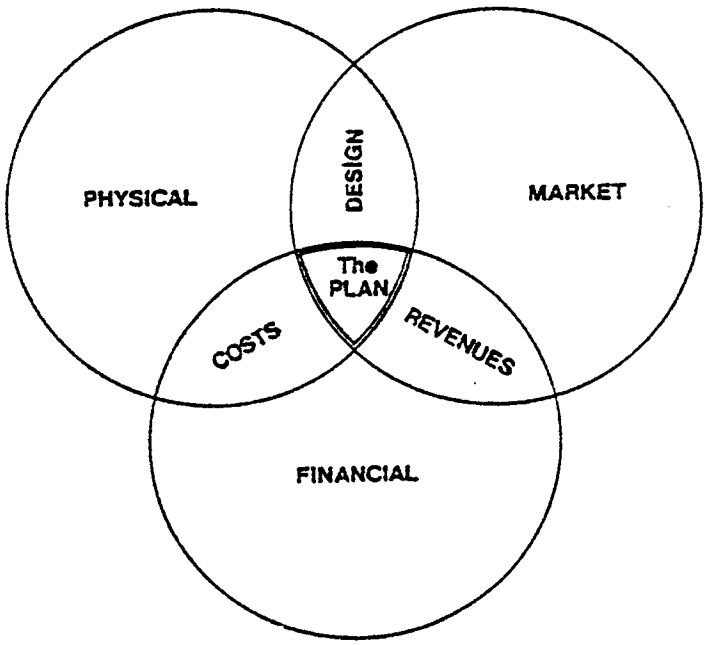
STATEMENT OF PURPOSE

The objective of Project Feasibility Analysis is to:

reduce the risk of uncertainty by stating assumptions completely and explicitly, and

enhance the value of the asset— land— by maximizing the margin between revenues from market opportunities and costs of development.

The process and techniques employed can be used to continuously assess feasibility from undocumented to fully documented assumptions. The level of documentation may vary for each of three categories of input, but each requires consideration as the analysis is undertaken.



INTRODUCTION

The Development Impact Model (DIM) provides a technique for performing a balanced feasibility analysis. It was developed by John Rahenkamp and Associates, Inc., in response to the need for feasibility evaluations which incorporate the social and political externalities affecting the feasibility of a proposed project. By recognizing the real and growing power of local political forces and environmental values as well as the need for a reasonable rate of return, the DIM measures the true feasibility of a particular project from the developer's and also the community's point of view.

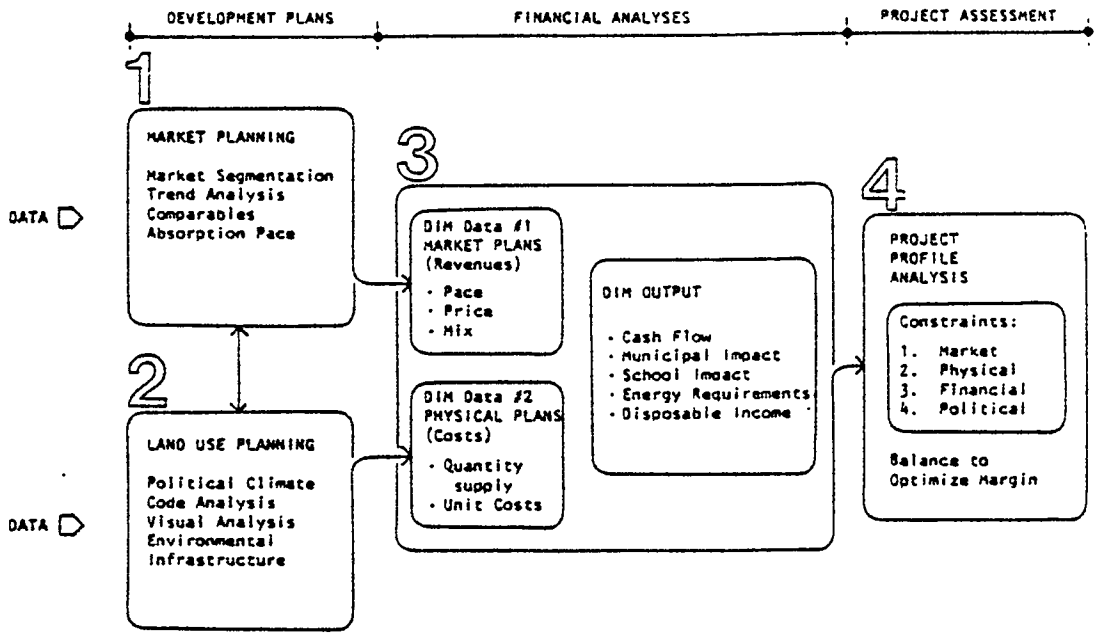
Essentially, the model identifies existing capacities of physical and fiscal systems, the projected demands resulting from the proposed project, and the resulting costs or benefits. It calculates not only front end expenses and bottom line profit, but it may also calculate the development's impact on local educational and municipal support systems. This information provides the developer and/or the community with a balanced measure of feasibility, political and environmental as well as financial. Since this information is objective as well as extensive, it should establish a sound basis for proper project approval or rezoning decisions.

Furthermore, the DIM is a computerized system utilizing the speed of the computer to deal with the numerous factor items and the vast range of possible combinations and permutations. Manual calculations of possible alternatives may take weeks, forcing decision-makers to act on incomplete information. In contrast, the computer offers the critical advantage of simulating available options quickly and performing continuous runs as criteria change either in the community's or developer's requirements.

It must be recognized that the value of a DIM feasibility evaluation is directly related to the accuracy and completeness of the basic data input. Each DIM analysis pertains only to the individual project and requires site-specific information. Much of the required data is usually already held by the developer or immediately available to him. The cost of a DIM feasibility analysis will obviously vary significantly depending on the amount of in-house research and data gathering required. If the information is provided directly by the developer in an appropriate form, the DIM evaluation costs are appreciably reduced.

The schematic diagram on the following page indicates the framework in which a feasibility analysis is carried out. Careful attention must be given to each of the three categories of project parameters depending upon the political/market/physical situation of a specific property. Once a minimum level of data is acquired and synthesized, gaming with critical variables can be accomplished quickly to develop an optimum project profile.

PROJECT FEASIBILITY ANALYSIS



The sections following discuss the kinds and character of analysis required prior to establishing data inputs to DIM. The level of detail of each separate analysis will depend upon that element's criticality for project approval, both from public officials and the developer initiating the evaluation.

The third section contains a project checklist itemizing the information supplied by a developer. This checklist illustrates the scope and detail of the DIM feasibility analysis and provides the necessary data to run the DIM program.

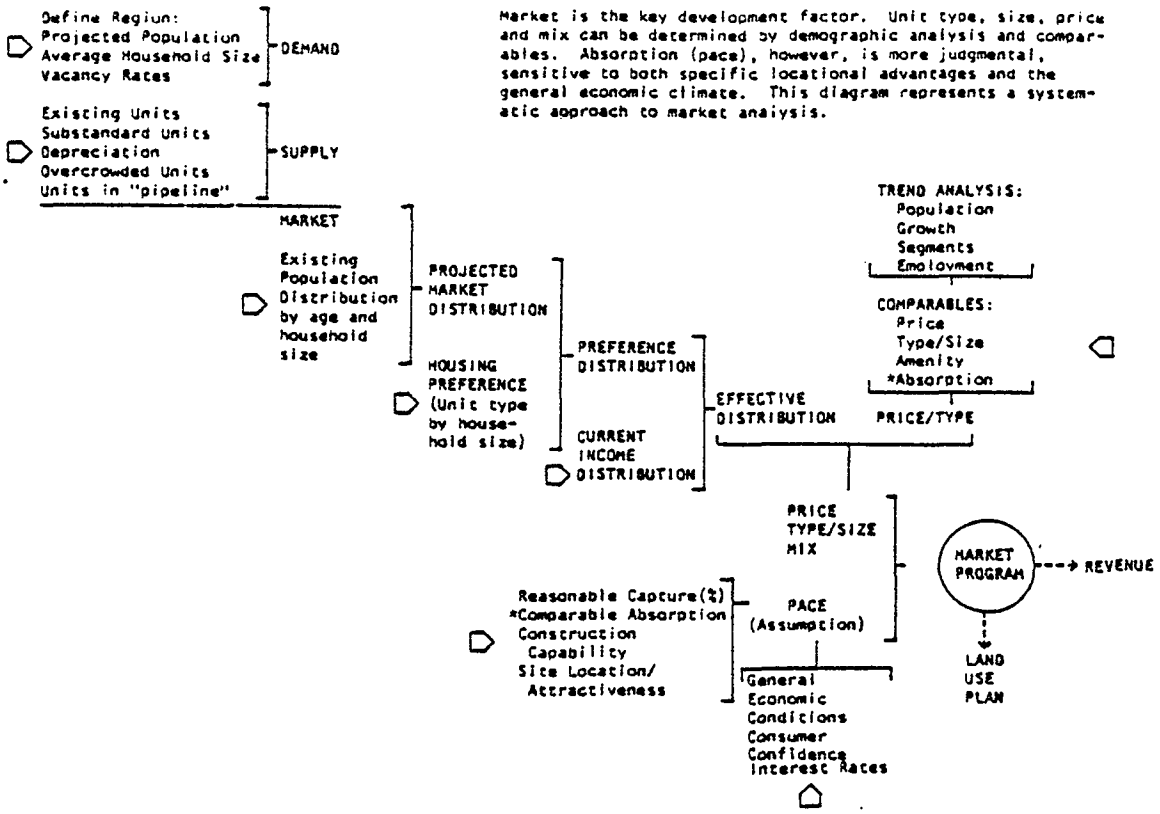
The Feasibility Checklist is supplemented by several pages of explanatory notes and exhibits. Each input space on the checklist has been assigned a code number which corresponds to a note describing the information required, and in five cases, these notes refer to one of the exhibits. After the exhibits is a sample of the checklist which was prepared for a typical project and a feasibility analysis printout which can be a guide.

It should be noted that all of the data indicated on the checklist is not required for analysis purposes. Where data is missing either a specific analysis will not be performed, e.g., School, Municipal, Demand, or the computer will assume a zero value. However, before each analysis all the data is reviewed by a staff computer specialist to insure its completeness.

1

market planning

MARKET SEGMENTATION



Market is the key development factor. Unit type, size, price and mix can be determined by demographic analysis and comparables. Absorption (pace), however, is more judgmental, sensitive to both specific locational advantages and the general economic climate. This diagram represents a systematic approach to market analysis.

MARKET SEGMENTATION ILLUSTRATION

MONTGOMERY CO.

PRICE LEVEL COMPARABLES

(RENT/MONTH)	180.	225.	275.	350.
GA-1BR	9697.	0.	0.	0.
GA-2BR	1727.	7856.	0.	0.
TH	2715.	2761.	2590.	0.
SF	422.	5368.	4808.	13836.
TOTAL NET MARKET	14562.	15986.	14397.	13836.
% TOTAL DEMAND	25.	27.	24.	24.

TOTAL NET MARKET (15 YEAR ESTIMATE) 58780.

MARKET TREND ANALYSIS

RESEARCH:

* Major commercial centers within 15 minutes
* Major commercial centers within 45 minutes
* Major employment centers within 15 minutes
* Major employment centers within 45 minutes
* Commercial and employment growth rate
* Population growth rate by age segments
* Family income growth rate by segments
* Housing vacancy rates
* Permits issued by type

INTERPRETATIONS:

* Strength and income/housing type implications of future employment opportunities
* Locational convenience
* Growing age and income segments related to price and housing type
* Strengh of competition; how much of the market is being absorbed and/or lost?

CONCLUSIONS:

* What is presently being built (price/type) is correct; follow the leaders and do comparables
* Identify market demands not being met
* There is some elasticity in the market to support price increases over competition
* Hold or reduce prices due to competition

MARKET COMPARABLES

Date: 2/14/75

Project Name: Indian Hills — Address: Winona Way
Owner: C. Quinn — Lender:
Builder: — Architect:
Age or Status: 8 yrs. — No. of Units: 120 — No. of Bldgs: 10
No. of Stories: 2 & 3 — No. Vacant: none — Type of Constr: frame
Map Key: 9

Bedrooms - Baths:	1/1	2/1
Number of Units:		
Monthly Rents:	185	275
Square Feet:	900	1000
Rent/Sq. Ft. (Unfurn):	.206	.275
No. of Furn. Apts:	none	
No. of Vacant Apts:	none	

Utilities Furnished: Electric: ____ Gas: ____ Water: x

Extra Charges: Refrigerator: ____ Other: ____
Furniture: 0 BR ____ 1 BR ____ 2 BR ____ 3 BR ____

Cooking Energy: elec. — Type of Heating: central gas — Walk-In Closets: ____
Air Conditioning: central — Ranges/Ovens: x — Fireplaces: ____
Dishwashers: x — Patios/Balconies: x — Carpets/Drapes: x
Washer/Dryer: in bldg. — Other Good Features/Remarks: ____

Pool(s): x — Laundry Facilities: in bldg.
Clubhouse(s): x — Security System: ____
Tennis: ____ — Parking: incl. garages
Playground Area: ____ — Storage Lockers: ____
Other Good Recreation or Project Features/Remarks: ____

MARKET PLAN/SUMMARY OF ASSUMPTIONS

Upon completion of the market segmentation analysis, the following information is arranged in a convenient form for direct input to the DIM data sheets and as a working program for physical land use planning.

Unit Types:	Single Family	Townhouse	Garden Apartment
Mix (%):	11.3	54.7	34.0
Price (K$):	60.0	45.0	30.0
Average Size (S.F.):	2,000	1,500	900
Average Stories:	1.5	2.5	3.0

Annual Sales*:					Pace
Year	1	0	0	0	0
	2	@	@	@	100
	3	@	@	@	130
	4	@	@	@	130
	5	@	@	@	130
	6	@	@	@	130
	7	@	@	@	140

*Based on market analysis only: Subject to physical confirmation after land use planning.

@Actual minimal distribution will be approximately equal to projected market mix but is subject to physical planning

2

land use planning

POLITICAL CLIMATE ANALYSIS

APPROVABILITY

Project Proposal Impacts:	on existing zoning on fair share on existing demography on existing population size on growth rate
Index of Exclusionary Tendency:	elected official turnover rate professional staff capability and attitudes change approval rate allowable density and land use types fair share allocation "vigilante" groups community income distribution
Codes and Procedures:	complexity clarity time lines flexibility requirements standards
Local Issues:	fiscal environmental land use utilities open space

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Estimate of legal position and potential tradeoffs.

Summary estimate of probability (%) of approval for proposed project.

CODE ANALYSIS

Applicable zoning codes are reviewed and analyzed to determine development potential under existing zoning or the availability of appropriate zoning districts which might satisfy the client's building program.

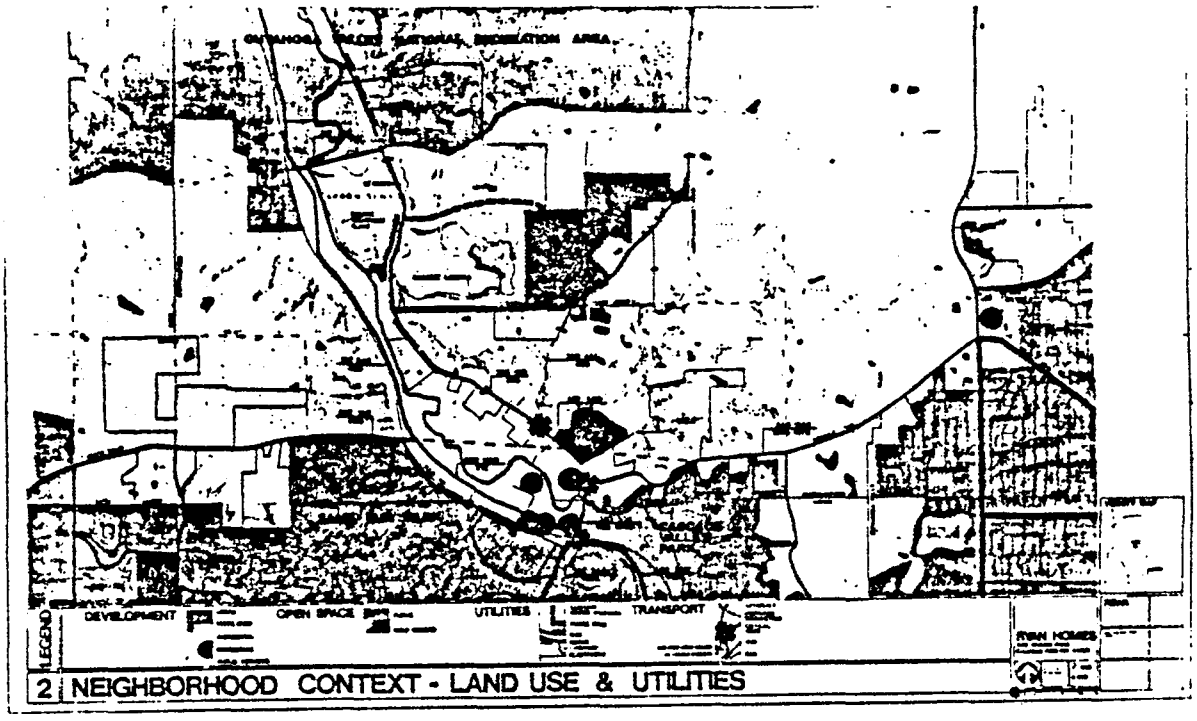
[illegible] election experienced a drastic realignment in its political structure. The Township, turned-out the "democratic machine" who had dominated Berlin for the past thirty to forty years. A group of young independents, whose platform was a change of government was elected with nearly 75% of the vote. As a result, all the major administrative boards were changed and people of the same persuasion as the Mayor-Council were appointed. A portion of the platform of the new government was to promote good substantial growth.

As a result of these changes, the Mayor-Council has appointed a Land Use Study Committee to review the Township's existing zoning ordinance to determine what changes should be made to encourage growth while minimizing its adverse effects.

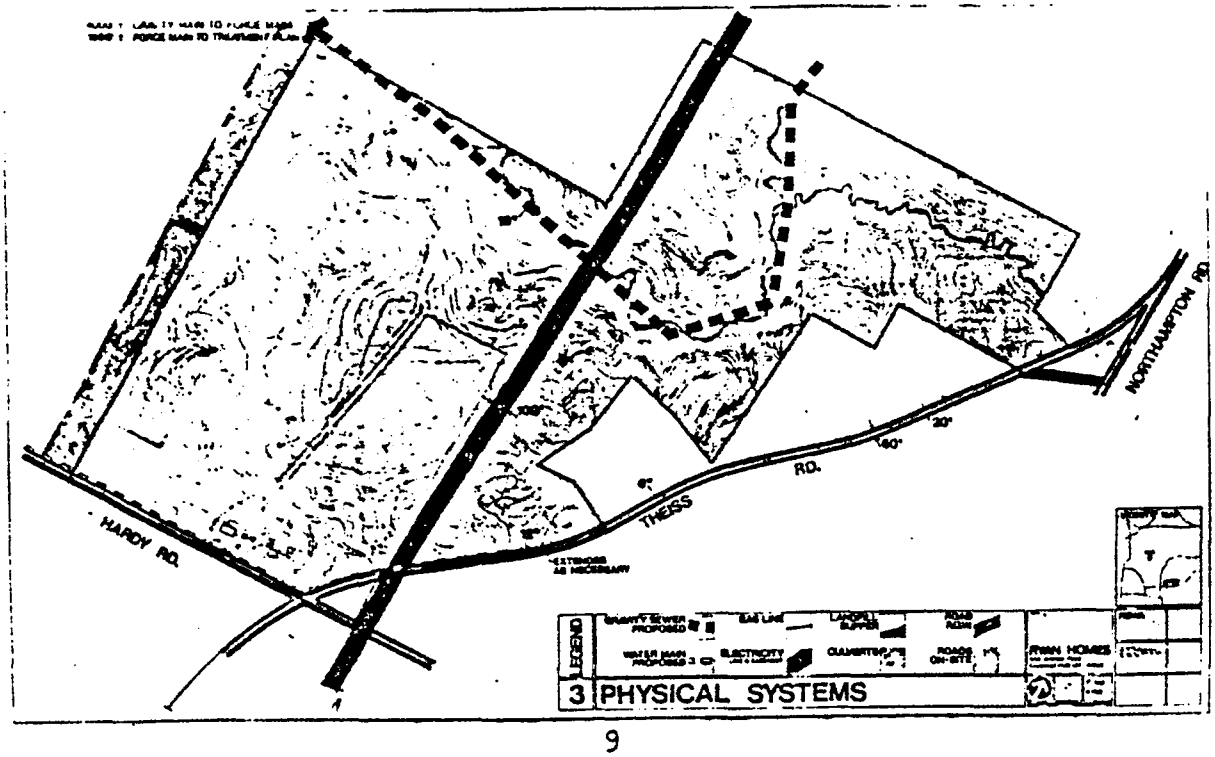
The site is presently zoned into three categories: 276 ac. in R-1 Residential with minimum lots of one acre; 21.5 ac. I-1 Light Industrial; and 2.5± ac. C-2 Neighborhood Commercial. With this splitting of the parcel into various zones, the chance of unified development is lessened which would not permit maximizing the site's development potential. The Township is relatively unsophisticated in its planning activities, but the new officials are aggressive and appear to be open to construction suggestion which will enable them to promote the desired quality growth.

INFRASTRUCTURE ANALYSIS

Every development generates demands on man-made systems. The capacity to absorb these demands must exist or be built. An analysis is required to make this determination which is often the difference between a profitable project and one that is marginal or premature.



2 NEIGHBORHOOD CONTEXT - LAND USE & UTILITIES

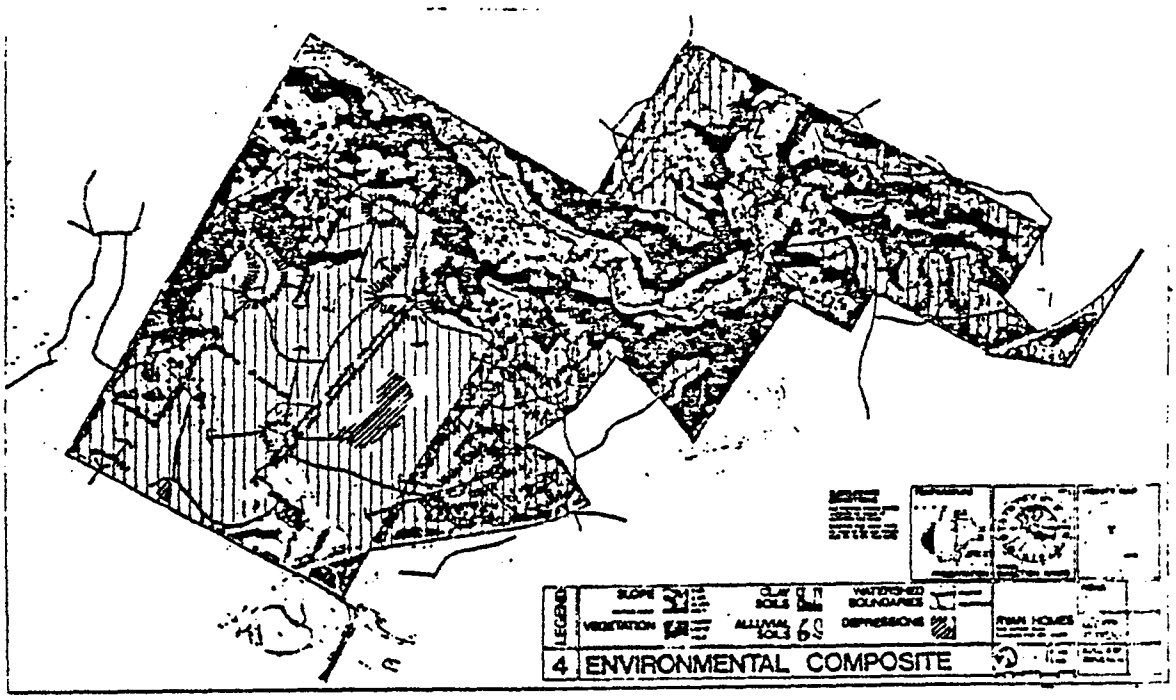


3 PHYSICAL SYSTEMS

ENVIRONMENTAL ANALYSIS

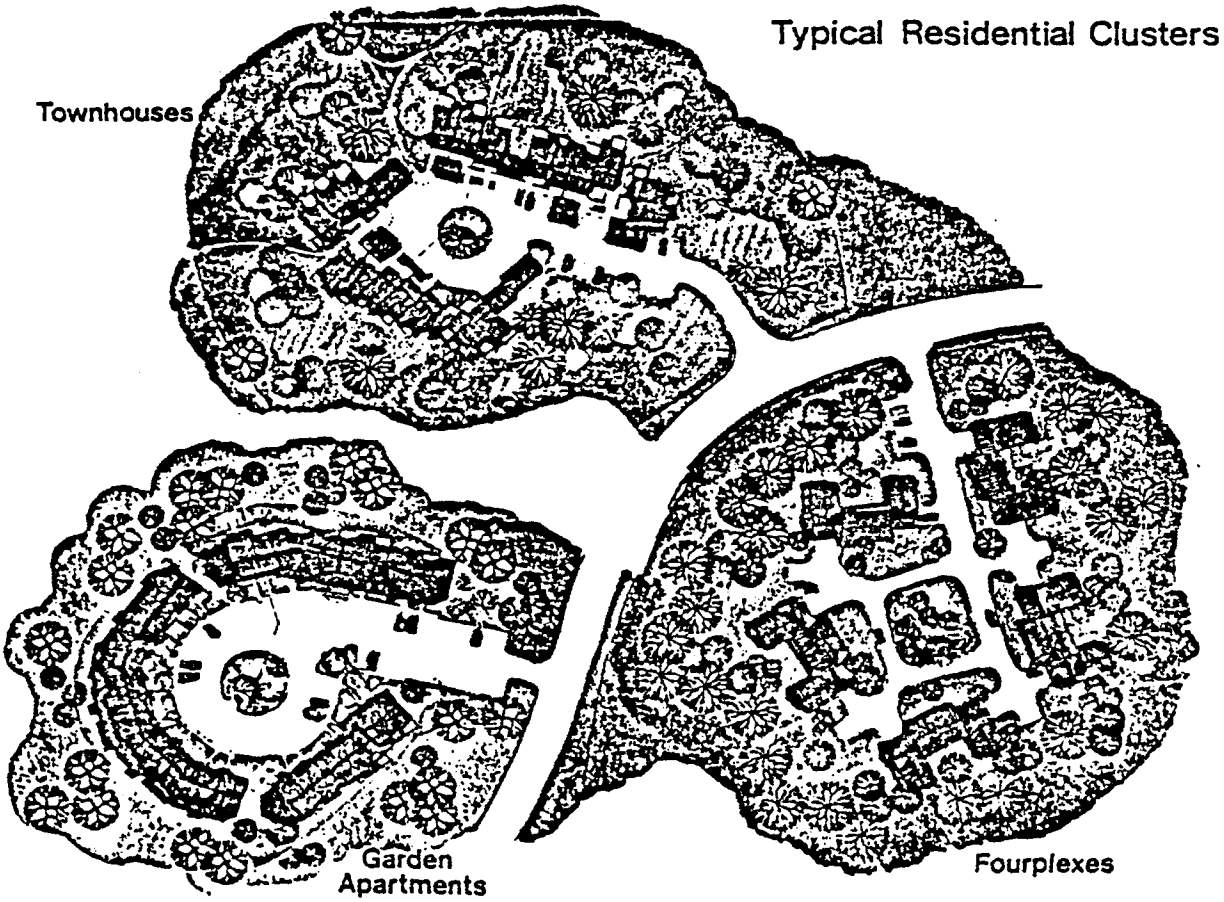
Environmental variables can be identified which materially affect the disposition of land uses if the plan is to be cost effective. Severe slopes, high water tables, and shallow bedrock have obvious cost consequences if not identified. Conserving trees and natural ground covers reduces landscaping costs and helps to prevent excessive erosion. Public health and safety must also be protected by identifying easily polluted soils and underground water supplies. If properly conducted and used, environmental analysis proves it is less costly to work with, rather than against, nature.

As part of the environmental analysis, the visual opportunities and burdens of the site, whether part of a larger neighborhood (if it's a small site) or as a self-contained neighborhood (if a large one) must be identified. Visual attributes include long or intimate views, dense or filtered spatial enclosures, natural features, and water. Burdens that must be mitigated if possible include noise, odors, visual obstructions like high tension lines, and unsightly views. The visual analysis locates these opportunities and burdens so they can be used in developing the land use plan most effectively.



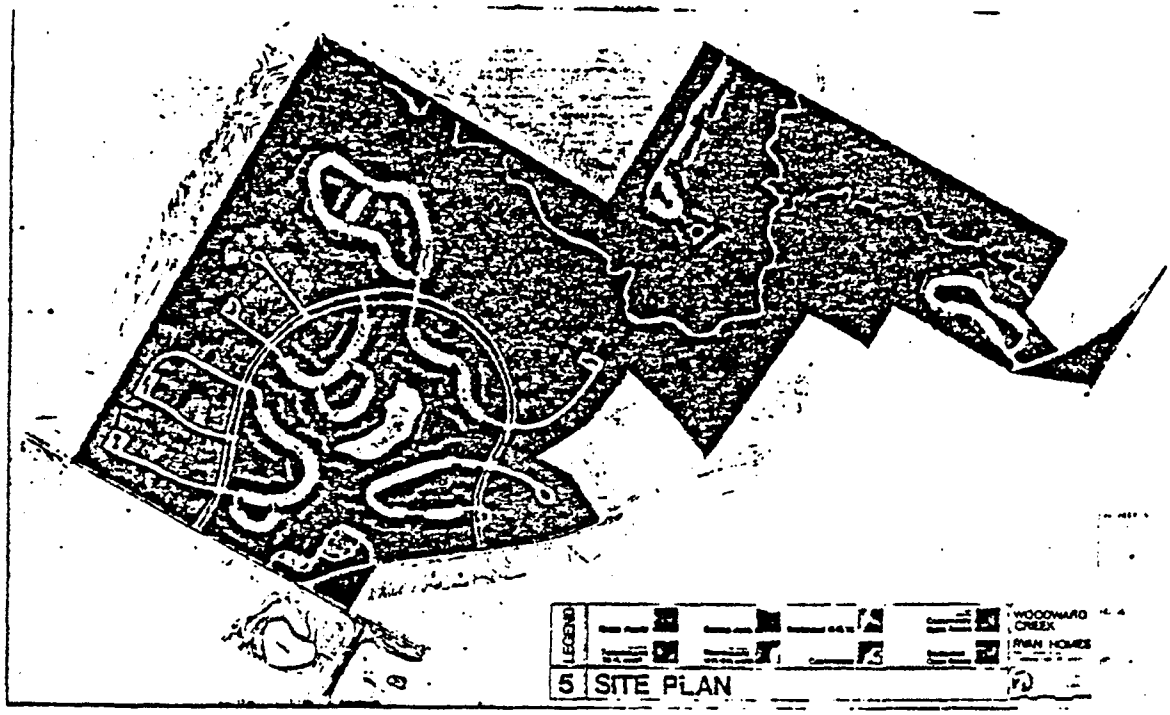
HOUSING PRODUCTS ANALYSIS

For land use plans to be used as reasonable representations of what can be built and for rough development cost estimates, it is necessary to be realistic about what can be placed on the ground (usually expressed as net densities for each unit type). Typical cluster designs are developed to insure that unit counts can be achieved and that lot improvement costs are accurate.



LAND USE PLANS

The land use plan must accommodate the market program and respect both visual and other environmental considerations. It must be cost-effectively phased for on and off-site infrastructure and generally enhance the marketability of the site through sensitive design.



3

financial analysis

DIM DATA INPUT SHEETS

The Development Impact Model (DIM) calculates quickly and accurately the combined consequences of the market, physical and other financial data provided to it. It is used to speed up computation and to organize the output so the project can be conveniently compared to acceptable standards of performance. The general value of the computer program is the ability to make many changes without the labor of endless calculation or the danger of error.

The DIM data sheets facilitate the systematic recording of the specific data requirements of the program. Each section has an appropriate heading covering the following four areas of data:

- Market Data from the market program (modified if necessary after physical planning)
- Physical Data from the land use plan
- Public Impact Data from the political climate and code analysis
- Financial Data from the client concerning sales and overhead costs

In general, the market determines revenues; land use, the costs; and public impacts, the probability of public approval.

Attached to the data sheets are specific definitions of what is included in the number called for in each box. In some cases, checklists are provided for even finer breakdowns. These definitions and checklists provide confidence that nothing has been overlooked and that revisions can be made without disturbing other variables. The data input to DIM is thus highly explicit.

client data

CLIENT NAME	DNAME-1
PROJECT NAME, LOCATION	DNAME-2
DATE	DATE-3

site data

SITE AREA COVERAGE ALLOWABLE	A-4	GSCAP-5	
INDUSTRIAL COMMERCIAL SCHOOL SITE	AI-6	AC-6	AS-6
MAJOR ROAD (R.O.W.) OPEN SPACE	AR-6	AO-6	
RECREATIONAL FACILITY OTHER (SPECIFY)	ARC-6	AOT-6	

unit data

UNIT TYPES DUMNMS-7						
NET DENSITIES DD-8						
SALE PRICES - RESIDENTIAL ISP-9 - INDUSTRIAL SPNRI-10 - COMMERCIAL SPNRC-11						
MIX MIX-12						
NUMBER OF UNITS INU-13						
UNIT SIZE AUS-14						
NUMBER OF STORIES STORYS-15						

demand data

ANNUAL REGIONAL RESIDENTIAL DEMAND	RD-16
ANNUAL REGIONAL INDUSTRIAL DEMAND	RID-17
ANNUAL REGIONAL COMMERCIAL DEMAND	RCD-18

school data

SCHOOL CAPACITY NSC-19		
CONSTRUCTION COST SQUARE FOOT REQUIREMENT	CSC-20	CSC-20
SCHOOL BOND RATE SCHOOL BOND TERM	DS-21	DS-21
OPER. INC. XOY-22		
SCHOOL ENROLLMENT MSC-23		

municipal data

REAL ESTATE VALUE MMV-24		
POPULATION MUNICIPAL COSTS	NR-25	CCOMOI-26

fiscal data

ASSESSMENT FACTOR AF-27		
SCHOOL TAX MILLAGE MUNICIPAL TAX MILLAGE	STM-28	MM-29

land and development data

LAND COST INTEREST PROFESSIONAL FEES	LC-30		INT-31		FOP-31
DEVELOPMENT COST OFF-SITE CONTRIBUTION	CA-33		DEVC-34		
ANNUAL LAND EXPENDITURES LAC-35	1	2	3	4	5
	6	7	8	9	10
ANNUAL SITE-DEVELOPMENT EXPENDITURES XPCPY-36	1	2	3	4	5
	6	7	8	9	10
ANNUAL OFF-SITE CONTRIBUTION OSC-37	1	2	3	4	5
	6	7	8	9	10

construction and management data

PERCENT LAND PRICE TO SALE PRICE PCT-38						
CONSTRUCTION COST/SQ. FT. BY UNIT TYPE ESCF-39						
LOT IMPROVEMENT COST/ UNIT TYPE CLI-40						
PERCENT SALES COST ESC-41						

TECHNICAL FEES INTEREST ON CONSTRUCTION	TECH-42	IOCC-43
OVERHEAD EXPENSE	POHE-44	

ANNUAL RESIDENTIAL CONSTRUCTION ID-45	1	2	3	4	5
	6	7	8	9	10
ANNUAL INDUSTRIAL CONSTRUCTION IID-46	1	2	3	4	5
	6	7	8	9	10
ANNUAL COMMERCIAL CONSTRUCTION CID-47	1	2	3	4	5
	6	7	8	9	10

annual sales/revenue data

ANNUAL RESIDENTIAL SALES (UNITS) SDU-48	1	2	3	4	5
	6	7	8	9	10
ANNUAL INDUSTRIAL SALES (ACRES) SNRAI-49	1	2	3	4	5
	6	7	8	9	10
ANNUAL COMMERCIAL SALES (ACRES) SNRAC-50	1	2	3	4	5
	6	7	8	9	10
OTHER REVENUES OR-51	1	2	3	4	5
	6	7	8	9	10
OTHER EXPENSES OE-52	1	2	3	4	5
	6	7	8	9	10

NOTES ON INPUT CHECKLIST

KEY CODE	KEY NUMBER	DESCRIPTION
CLIENT DATA		
DNAME	(1)	CLIENT NAME
DNAME	(2)	PROJECT NAME, LOCATION: LOCATION BY MUNICIPALITY, STATE.
DATE	(3)	DATE: DATE OF CHECKLIST COMPLETION.
SITE DATA		
A	(4)	SITE AREA: TOTAL SITE ACREAGE.
GSCAP	(5)	COVERAGE ALLOWABLE: TOTAL ALLOWABLE IMPERVIOUS COVER AS DEFINED BY CODE; 30% COVERAGE MAXIMUM.
		NON-RESIDENTIAL ACREAGES
AI	(6)	INDUSTRIAL
AC	(6)	COMMERCIAL
AS	(6)	SCHOOL SITE
AR	(6)	MAJOR ROAD (RIGHT-OF-WAY)
AO	(6)	OPEN SPACE
ARC	(6)	RECREATIONAL FACILITY
AOT	(6)	OTHER (SPECIFY)
UNIT DATA		
DUMNMS	(7)	UNIT TYPES: DEFINED AS SINGLE FAMILY (SF), TOWNHOUSE (TH), GARDEN APARTMENT (GA), MID-RISE (MR), HIGH RISE (HR).
DD	(8)	NET DENSITIES: NET DENSITY PER UNIT TYPES, IN DWELLING UNITS PER ACRE.

SALE PRICES:

ISP	(9)	ESTIMATED AVERAGE SALES PRICE BY RESIDENTIAL UNIT TYPE.
SDNRI	(10)	ESTIMATED AVERAGE SALES PRICE BY INDUSTRIAL UNIT TYPE.
SPNRC	(11)	ESTIMATED AVERAGE SALES PRICE BY COMMERCIAL UNIT TYPE.
MIX	(12)	MIX: SUGGESTED RESIDENTIAL UNIT MIX AS A PERCENT OF TOTAL RESIDENTIAL UNITS (100%). SUGGESTED NON-RESIDENTIAL UNIT MIX AS A PERCENT OF TOTAL NON-RESIDENTIAL UNITS (100%).
INU	(13)	NUMBER OF UNITS: SUGGESTED NUMBER OF UNITS BY RESIDENTIAL AND NON-RESIDENTIAL TYPES.
AUS	(14)	UNIT SIZE: ESTIMATED SQUARE FOOTAGE OF LIVING AREA BY RESIDENTIAL UNIT TYPE. ESTIMATED SQUARE FOOTAGE OF GROSS LEASABLE AREA (GLA) BY NON-RESIDENTIAL UNIT TYPE.
STORYS	(15)	NUMBER OF STORIES: ESTIMATED HEIGHT OF BUILDINGS IN NUMBER OF STORIES BY RESIDENTIAL AND NON-RESIDENTIAL UNIT TYPES.

DEMAND DATA

RD	(16)	ANNUAL REGIONAL RESIDENTIAL DEMAND: TOTAL NUMBER OF RESIDENTIAL UNITS DEMANDED ANNUALLY WITHIN THE DEFINED MARKET AREA.
RID	(17)	ANNUAL REGIONAL INDUSTRIAL DEMAND: TOTAL NUMBER OF INDUSTRIAL UNITS DEMANDED ANNUALLY WITHIN THE DEFINED MARKET AREA. (1,000 SQ. FT. PER UNIT)

RCD	(18)	ANNUAL REGIONAL COMMERCIAL DEMAND: TOTAL NUMBER OF COMMERCIAL UNITS DEMANDED ANNUALLY WITHIN THE DEFINED MARKET AREA, (1,000 SQ. FT. PER UNIT)

SCHOOL DATA

NSC	(19)	SCHOOL CAPACITY: TOTAL NUMBER OF SPACES AVAILABLE IN THE MUNICIPAL SCHOOL SYSTEM. (TOTAL CAPACITY OF ALL SCHOOLS MINUS CURRENT ENROLLMENT.)
CSC	(20)	CONSTRUCTION COST (SCHOOLS): ESTIMATED COST PER SQUARE FOOT FOR SCHOOL CONSTRUCTION.
CSC	(20)	SQUARE FOOT REQUIREMENT: THE NUMBER OF SQUARE FEET REQUIRED PER STUDENT BY STATE LAW OR MUNICIPAL RECOMMENDATION.
DS	(21)	SCHOOL BOND RATE: THE CURRENT OR PROJECTED INTEREST RATE ON SCHOOL BOND OFFERINGS.
DS	(21)	SCHOOL BOND TERM: THE CURRENT OR PROJECTED NUMBER OF YEARS FOR A SCHOOL BOND TO REACH MATURITY FROM ITS INITIAL OFFERING.
XOY	(22)	OPER. INC. THE AMOUNT OF REVENUE RAISED THROUGH LOCAL REAL ESTATE TAXES USED IN THE SCHOOL OPERATING BUDGET FOR THE CURRENT ACADEMIC YEAR. (RESIDENTIAL ONLY IF AVAILABLE)
MSC	(23)	SCHOOL ENROLLMENT: THE TOTAL NUMBER OF SCHOOL CHILDREN REGISTERED IN THE SCHOOL SYSTEM FOR THE CURRENT ACADEMIC YEAR (DATE).

INT	(31)	INTEREST: INTEREST RATE AT WHICH LAND FINANCING WAS/WOULD BE OBTAINED.
FOP	(32)	PROFESSIONAL FEES: TOTAL FEES TO INCLUDE ALL PLANNING AND LEGAL EXPENSES BEFORE ANY TECHNICAL FEES RELATING TO CONSTRUCTION (DEFINED BELOW).
CA	(33)	DEVELOPMENT COST: TOTAL COST OF SITE DEVELOPMENT (SEE EXHIBIT 1 FOR ITEMIZED BREAKDOWN).
DEVC	(34)	OFF-SITE CONTRIBUTION: TOTAL OFF-SITE COSTS (SEE EXHIBIT 2 FOR ITEMIZED BREAKDOWN).
LAC	(35)	ANNUAL LAND EXPENDITURES ($): ANNUAL DISTRIBUTION OF LAND AND CARRY COSTS THROUGH THE PROJECT PERIOD. (MAY BE SUPPLIED IN LIEU OF ITEMS (30) AND (31).)
XPCPY	(36)	ANNUAL SITE-DEVELOPMENT EXPENDITURES ANNUAL PERCENT DISTRIBUTION OF SITE DEVELOPMENT COSTS. THIS WILL BE RELATED TO ESTIMATED CONSTRUCTION OR PHASING PACE.
OSC	(37)	ANNUAL OFF-SITE CONTRIBUTION ($): ANNUAL DISTRIBUTION OF OFF-SITE COSTS THROUGH THE PROJECT PERIOD. (THE TOTAL SHOULD AGREE WITH EXHIBIT 2.)

CONSTRUCTION AND MANAGEMENT DATA

PCT	(38)	PERCENT LAND PRICE TO SALE PRICE: THE PERCENT OF TOTAL RESIDENTIAL UNIT SALE PRICE ATTRIBUTABLE TO LAND SALE.
ESCF	(39)	CONSTRUCTION COST/SQ. FT. BY UNIT TYPE: ESTIMATED COST PER SQUARE FOOT FOR RESIDENTIAL CONSTRUCTION (BRICKS AND MORTAR) OF LIVING AREA, BASEMENTS, AND GARAGES (SEE EXHIBIT 3 FOR ITEMIZED BREAKDOWN).

Municipal Data

MMV	(24)	Real Estate Value: Total value of all real estate BEFORE the assessment ratio is applied. Typically broken down into residential and non-residential uses (Supply breakdown if possible).
NR	(25)	Population: Current total population defined by the municipality or Census.
CCOMOI	(26)	Municipal Costs: Any expenditures required BY the municipality due to the demands of project development.

Fiscal Data

AF	(27)	Assessment Factor: The ratio of assessed value to market value used by the assessor's office for determining the value of real estate for tax purposes.
STM	(28)	School Tax Millage: The millage rate set by the municipality for school revenues raised from real estate taxes. (Supply itemized tax bill.)
MM	(29)	Municipal Tax Millage: The millage rate set by the municipality for municipal revenues raised from real estate taxes. (Supply itemized tax bill.)

Land and Development Data

LC	(30)	Land Cost: Gross purchase price of the land net of any interest charges. (The annual distribution of Land and Carry may be supplied in # (35) in lieu of (30) and (31).)

CLI	(40)	LOT IMPROVEMENT COST/UNIT TYPE: ESTIMATED COST FOR LOT IMPROVEMENT (WITHIN THE LOT LINE) BY RESIDENTIAL UNIT TYPE (SEE EXHIBIT 4 FOR ITEMIZED BREAKDOWN).
ESC	(41)	PERCENT SALES COST: PERCENT OF TOTAL SALE PRICE ATTRIBUTED TO SALES AND CLOSING EXPENSES.
TECH	(42)	TECHNICAL FEES: TOTAL FEES PER UNIT TO INCLUDE ARCHITECTURAL, ENGINEERING, HOOK-UP, ETC. (SEE EXHIBIT 5 FOR ITEMIZED BREAKDOWN).
IOCC	(43)	INTEREST ON CONSTRUCTION: INTEREST RATE AT WHICH CONSTRUCTION FINANCING WAS/WOULD BE OBTAINED.
POHE	(44)	OVERHEAD EXPENSE: PERCENT OF SALE PRICE ATTRIBUTED TO GENERAL OVERHEAD EXPENSES.
ID	(45)	ANNUAL RESIDENTIAL CONSTRUCTION: ESTIMATED ANNUAL TOTAL RESIDENTIAL CONSTRUCTION BEGINNING WITH YEAR ONE, RUNNING THROUGH THE TOTAL LENGTH OF THE PROJECT.
IID	(46)	ANNUAL INDUSTRIAL CONSTRUCTION: ESTIMATED ANNUAL TOTAL INDUSTRIAL CONSTRUCTION BEGINNING WITH YEAR ONE, RUNNING THROUGH THE TOTAL LENGTH OF THE PROJECT.
CID	(47)	ANNUAL COMMERCIAL CONSTRUCTION: ESTIMATED ANNUAL COMMERCIAL CONSTRUCTION BEGINNING WITH YEAR ONE, RUNNING THROUGH THE TOTAL LENGTH OF THE PROJECT.

Sales/Revenue Data

SDU	(48)	Annual Residential Sales (units): Estimated annual unit sales beginning with year one, running through the total length of the project.
SNRAI	(49)	Annual Indistrial Sales (acres): Estimated annual sale of industrial acreage beginning with year one, running through the total length of the project.
SNRAC	(50)	Annual Commercial Sales (acres): Estimated annual sale of commercial acreage beginning with year one, running through the total length of the project.
OR	(51)	Other Revenues: Additional annual revenues anticipated from the project by year not included previously.
OEX	(52)	Other Expenses: Additional annual expenses anticipated from the project not included previously.

EXHIBIT 1

DEVELOPMENT COST

(INCLUDE ALL DEVELOPMENT/IMPROVEMENTS WITHIN THE PROJECT'S BOUNDARIES EXCLUDING LOT IMPROVEMENTS AND BUILDING CONSTRUCTION COSTS.)

ITEM	QUANTITY	UNIT COST	ALLOWANCES*	TOTAL COST
A. ROADS/STREETS (1)				
1. CLEARING				
2. ROAD GRADING				
3. ROAD SURFACING				
4. CURB AND GUTTER				
5. SIDEWALK				
6. STREET LIGHTING				
7. SEEDING/SODDING (COMMON AREAS, NOT LOTS)				
8. STREET TREES/ PLANTING (COMMON AREAS)				
9. OTHER				
SUBTOTAL				

NOTES:

* ALLOWANCES: ANY CONTINGENCIES ON ALLOWANCES FOR OVERHEAD AND PROFIT NOT INCLUDED IN UNIT OR TOTAL COST.

(1) ROADS/STREETS - INCLUDE ALL NECESSARY IMPROVEMENTS, WITHIN DEDICATED ROAD R.O.W., REQUIRED BY ORDINANCE AND/OR CODE.

ITEM	QUANTITY	UNIT COST	ALLOW-ANCES	TOTAL COST

B. STORM WATER/ SEWER SYSTEM (2)

1. PIPE
2. CATCH BASINS
3. CULVERTS
4. RETENTION PONDS
5. OTHER

SUBTOTAL

C. SANITARY SEWER/ SEWAGE DISPOSAL (3)

1. SEPTIC SYSTEMS
2. TREATMENT PLANT
3. PUMP/LIFT STATIONS
4. FORCE/GRAVITY MAINS
5. MANHOLES
6. CONNECTION CHARGES/ ASSESSMENTS
7. OTHER

SUBTOTAL

NOTES:

(2) STORM WATER/SEWER SYSTEM - INCLUDE ALL REQUIRED STORM SEWER/ DRAINAGE NECESSARY TO CONTROL STORM WATER RUNOFF AS REQUIRED BY ORDINANCE AND/OR CODE.

(3) SANITARY SEWER/SEWAGE DISPOSAL - INCLUDE ALL CONSTRUCTION NECESSARY TO PROVIDE COMPLETE SEWAGE FACILITIES. DO NOT INCLUDE ON-SITE LATERAL CONNECTIONS. THESE ARE CONSIDERED ON A LOT BASIS IN EXHIBIT 4.

ITEM	QUANTITY	UNIT COST	ALLOW-ANCES	TOTAL COST
D. WATER SYSTEM (4)				
1. WELL				
2. MAIN				
3. HYDRANTS				
4. CONNECTION CHARGES/ ASSESSMENTS				
5. OTHER				
SUBTOTAL				
E. OPEN SPACE/ COMMUNITY FACILITIES (5)				
1. CLEARING				
2. PATHS				
3. LIGHTING				
4. PLAY AREAS				
5. TENNIS COURTS OR OTHERS				
6. SWIMMING POOL				
7. COMMUNITY BUILDING				
8. LANDSCAPING				
9. OTHER				
SUBTOTAL				
F. TOTAL				

NOTES:

(4) WATER SYSTEM - INCLUDE ALL CONSTRUCTION NECESSARY TO PROVIDE COMPLETE WATER DISTRIBUTION SYSTEM. DO NOT INCLUDE ON-SITE LATERAL CONNECTIONS. THESE ARE CONSIDERED ON A LOT BASIS IN EXHIBIT 4.

(5) OPEN SPACE/COMMUNITY FACILITIES - INCLUDE ALL IMPROVEMENTS NECESSARY TO MEET RECREATIONAL DEMANDS OF PROJECT.

EXHIBIT 2

OFF-SITE CONTRIBUTION

(INCLUDE ALL DEVELOPMENT/IMPROVEMENTS BEYOND THE PROJECT'S BOUNDARIES THAT ARE CONSIDERED TO BE ESSENTIAL OR ATTRIBUTABLE TO THE PROJECT'S DEVELOPMENT.)

ITEM	QUANTITY	UNIT COST	ALLOWANCES*	TOTAL COST
A. ROAD/STREET				
1. SURFACING				
2. CURB AND GUTTER				
3. TRAFFIC CONTROLS				
4. LIGHTING				
5. ASSESSMENTS				
6. OTHER				
SUBTOTAL				
B. STORM WATER/ SEWER SYSTEM				
1. PIPE				
2. CATCH BASINS				
3. CULVERTS				
4. CONNECTION CHARGES/ ASSESSMENTS				
5. OTHER				
SUBTOTAL				

* ALLOWANCES: ANY CONTINGENCIES ON ALLOWANCES FOR OVERHEAD AND PROFIT NOT INCLUDED IN UNIT OR TOTAL COST.

ITEM	QUANTITY	UNIT COST	ALLOW-ANCES	TOTAL COST
C. SANITARY SEWER/ SEWAGE DISPOSAL				
1. TREATMENT PLANT IMPROVEMENTS				
2. PUMP/LIFT STATIONS				
3. FORCE/GRAVITY MAINS				
4. MANHOLES				
5. CONNECTION CHARGES/ ASSESSMENTS				
6. OTHER				
SUBTOTAL				
D. WATER SYSTEM				
1. MAIN				
2. HYDRANTS				
3. CONNECTION CHARGES/ ASSESSMENTS				
4. OTHER				
SUBTOTAL				
E. OTHER COSTS/ COMMUNITY FAC. CONTRIBUTIONS				
1. SCHOOLS				
2. PARKS				
3. OTHER				
SUBTOTAL				
F. TOTAL				

EXHIBIT 3

CONSTRUCTION COST/SQ. FT.
(FOR EACH UNIT TYPE)

(INCLUDE ALL CONSTRUCTION COSTS RELATED TO ACTUAL PRODUCTION OF HOUSING/DWELLING UNIT EXCLUDING SITE AND LOT DEVELOPMENT AND ARCHITECTURAL FEES, MARKETING COSTS, ETC.)

UNIT TYPE	ITEM	SIZE	SQ. FT. COST	TOTAL
	LIVING AREA			
	BASEMENT			
	GARAGE			
	OTHER			
	TOTAL			
	LIVING AREA			
	BASEMENT			
	GARAGE			
	OTHER			
	TOTAL			
	LIVING AREA			
	BASEMENT			
	GARAGE			
	OTHER			
	TOTAL			
	LIVING AREA			
	BASEMENT			
	GARAGE			
	OTHER			
	TOTAL			

EXHIBIT 4

LOT IMPROVEMENT COST
(FOR EACH UNIT TYPE)

A. SINGLE FAMILY DETACHED: INCLUDE ALL DEVELOPMENT/IMPROVEMENTS WITHIN THE LOT AREA EXCLUDING ACTUAL BUILDING CONSTRUCTION.

B. SINGLE FAMILY ATTACHED: INCLUDE ALL DEVELOPMENT/IMPROVEMENTS WITHIN THE SITE AREA OF THE HOUSING CLUSTER/BUILDING TYPE ATTRIBUTED TO EACH INDIVIDUAL DWELLING UNIT.

C. MULTI-FAMILY: INCLUDE ALL DEVELOPMENT/IMPROVEMENTS WITHIN THE SITE AREA OF THE BUILDING "UNIT" ATTRIBUTED TO EACH INDIVIDUAL DWELLING UNIT (TOTAL COST DIVIDED BY NUMBER OF D.U. = COST PER D.U.).

UNIT TYPE:

ITEM	QUANTITY	UNIT COST	ALLOWANCES	TOTAL COST
A. CLEARING (1)				
B. GRADING AND DRAINAGE (2)				
C. SURFACING (3)				
D. SAFETY CONTROLS (4)				
E. WATER SERVICE (5)				
F. SANITARY SEWER (6)				
G. LANDSCAPING (7)				
H. FEES AND PERMITS (8)				
I. OTHER (9)				
TOTAL				

NOTES:

(1) CLEARING - INCLUDE TOTAL AND SELECTIVE CLEARING NECESSARY TO ACCOMMODATE CONSTRUCTION WITHIN "LOT" AREA.

(2) GRADING AND DRAINAGE - INCLUDE ALL IMPROVEMENTS NECESSARY TO PROVIDE FOR ADEQUATE DRAINAGE AND STORM WATER RUNOFF FROM "LOT."

(3) SURFACING - INCLUDE ALL DRIVES AND PARKING AREAS, WALKS AND TERRACES AND OTHER SURFACING.

(4) SAFETY CONTROLS - INCLUDE BOLLARDS, LIGHTING AND OTHER CONTROLS.

(5) WATER SERVICE - INCLUDE ALL WATER LATERALS FROM MAIN IN ROAD R.O.W. TO BUILDING.

(6) SANITARY SEWER - INCLUDE ALL SEWER LATERALS FROM SEWER MAIN TO BUILDING.

(7) LANDSCAPING - INCLUDE GRADING, TOPSOIL, SEEDING, AND LANDSCAPE CONSTRUCTION AND PLANTING ALLOWANCE.

(8) FEES AND PERMITS - INCLUDE SEWER AND WATER HOOK-UP AND BUILDING PERMITS.

(9) OTHER.

EXHIBIT 5

TECHNICAL FEES

(INCLUDE ALL ARCHITECTURAL, ENGINEERING, LANDSCAPE ARCHITECTURAL, LAND SURVEYING, GRAPHIC AND INTERIOR-DESIGN FEES FOR EACH CATEGORY ON A UNIT BASES AS INDICATED BY THE NOTES.)

ITEM	TOTAL COST
A. ARCHITECTURAL (1)	
B. ENGINEERING (2)	
C. LANDSCAPE ARCHITECTURAL (3)	
D. LAND SURVEYING (4)	
E. GRAPHICS (5)	
F. INTERIOR DESIGN (6)	
TOTAL	

NOTES:

(1) ARCHITECTURAL

A. BUILDING DESIGN (COMPLETE)
B. CONSTRUCTION SPECIFICATION (BUILDING SYSTEMS)
C. CONSTRUCTION COST ESTIMATES AND PROGRAM ($ AND SCHEDULE)
D. CONSTRUCTION INSPECTION (PERIODIC)

(2) ENGINEERING

A. ROAD/STREET SYSTEMS DESIGN (HORIZONTAL AND VERTICAL CURVE DATA, PROFILES)
B. UTILITY SYSTEMS DESIGN (SEWAGE, WATER, STORM, ETC.)
C. LOT DESIGN (LOT CLOSURE AND PLAT/SURVEY DATA)
D. CONSTRUCTION SPECIFICATIONS (ROAD AND UTILITY SYSTEMS)
E. CONSTRUCTION COST ESTIMATES AND PROGRAM ($ AND SCHEDULE)
F. CONSTRUCTION INSPECTION (PERIODIC)

(3) LANDSCAPE ARCHITECTURAL

A. LANDSCAPE CONSTRUCTION AND PLANTING DESIGN (ALL SITE IMPROVEMENTS NOT COVERED BY ARCHITECTURAL AND ENGINEERING, I.E. GRADING, SURFACING, RETAINMENT, LIGHTING, PLANTING, SPECIAL FEATURES, ETC.)
B. CONSTRUCTION AND PLANTING SPECIFICATIONS (AS NOTED IN 3A.)
C. CONSTRUCTION AND PLANTING COST ESTIMATES AND PROGRAM ($ AND SCHEDULE)
D. CONSTRUCTION AND PLANTING INSPECTION (PERIODIC)

(4) LAND SURVEYING

A. ROAD/STREET SYSTEMS LAYOUT (SEE 2A.)
B. UTILITY SYSTEMS LAYOUT (SEE 2B.)
C. LOT LAYOUT (BOUNDARY SURVEY AND MONUMENTS)
D. BUILDING LAYOUT (STAKEOUT AND SET ELEVATIONS)
E. LANDSCAPE CONSTRUCTION LAYOUT (STAKEOUT DRIVES, PARKING, ETC. AND SET ELEVATIONS)

(5) GRAPHICS

A. SIGNAGE (PROJECT SIGNS, ETC.)
B. P.R. LITERATURE (BROCHURES, ETC.)

(6) INTERIOR DESIGN

A. INTERIORS (SAMPLES/MODELS)
B. MATERIALS/COLORS (TYPICAL UNITS)

EXAMPLE: INPUT CHECKLIST
(Private Developer Data Only)

client data

CLIENT NAME	XYZ Corporation DNAME-1
PROJECT NAME, LOCATION	A-PUD, Akron, Ohio DNAME-2
DATE	9/13/79 DATE-3

site data

SITE AREA COVERAGE ALLOWABLE	207.00 A-4	GSCAP-5	
INDUSTRIAL COMMERCIAL SCHOOL SITE	AI-6	4.79 AC-6	AS-6
MAJOR ROAD (R.O.W.) OPEN SPACE	7.40 AR-6	112.35 AO-6	
RECREATIONAL FACILITY OTHER (SPECIFY)	3.30 ARC-6	7.58 AOT-6	

unit data

UNIT TYPES DUMNMS-7	SFD	TH	GA			
NET DENSITIES DD-8	4.42	8.75	15.20			
SALE PRICES - RESIDENTIAL ISP-9 - INDUSTRIAL SPNRI-10 - COMMERCIAL SPNRC-11	68250.	52800.	43700.			
MIX MIX-12	22.1	22.5	55.5			
NUMBER OF UNITS INU-13	141	143	354			
UNIT SIZE AUS-14	1625	1200	950			
NUMBER OF STORIES STORYS-15	2	2	2			

land and development data

LAND COST INTEREST PROFESSIONAL FEES	1,424,665 LC-30	0.00 INT-31	150,000 FOP-31
DEVELOPMENT COST OFF-SITE CONTRIBUTION	1,535,714 CA-33	113,000 DEVC-34	

	1	2	3	4	5
ANNUAL LAND EXPENDITURES LAC-35	250000.	413333.	386666.	374666.	
	6	7	8	9	10
ANNUAL SITE-DEVELOPMENT EXPENDITURES XPCPY-36	.417	.230	.275	.078	
ANNUAL OFF-SITE CONTRIBUTION OSC-37	113000.				

construction and management data

PERCENT LAND PRICE TO SALE PRICE PCT-38	14.	9.	6.			
CONSTRUCTION COST/SQ. FT. BY UNIT TYPE ESCF-39	25.	24.	22.			
LOT IMPROVEMENT COST/ UNIT TYPE CLI-40	3000.	3100.	2100.			
PERCENT SALES COST ESC-41	14	9	6			

TECHNICAL FEES INTEREST ON CONSTRUCTION	350 TECH-42	3.0 IOCC-43
OVERHEAD EXPENSE	5.0 POHE-44	

	1	2	3	4	5
ANNUAL RESIDENTIAL CONSTRUCTION ID-45	186	190	116	146	
	6	7	8	9	10
ANNUAL INDUSTRIAL CONSTRUCTION IID-46					
ANNUAL COMMERCIAL CONSTRUCTION CID-47				4.79	

annual sales/revenue data

ANNUAL RESIDENTIAL SALES (UNITS) SDU-48	1 186	2 190	3 116	4 146	5
	6	7	8	9	10
ANNUAL INDUSTRIAL SALES (ACRES) SNRAI-49	1	2	3	4	5
	6	7	8	9	10
ANNUAL COMMERCIAL SALES (ACRES) SNRAC-50	1	2	3	4 4.79	5
	6	7	8	9	10
OTHER REVENUES OR-51	1	2	3	4	5
	6	7	8	9	10
OTHER EXPENSES OE-52	1 200000.	2 200000.	3	4	5
	6	7	8	9	10

** pages 40 through 54 are not included because they could not be reproduced clearly enough to be legible

EXAMPLE: PROJECT FEASIBILITY ANALYSIS PRINTOUT

```
0.4420000E 01     0.8750000E 01     0.1519993E 02
0.2210031E 00     0.2241379E 00     0.5546589E 00
     141              143              354               638
0.1114102E 02
     311     0.0000000E 00     0.0000000E 00
0.1000000E 03     0.0000000E 00     0.1437000E 06
```

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RESIDENTIAL LAND USE FEASIBILITY PROGRAM

AKRON/
ALTERNATIVE #1
13 SEPTEMBER 1979


RAHENKAMP, SACHS, WELLS & ASSOCIATES
1717 SPRING GARDEN ST.
PHILADELPHIA, PENNSYLVANIA

ECONOMICS AND MARKETING GROUP

A PROPRIETARY PROGRAM
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APPENDIX: DEVELOPMENT IMPACT MODEL — OPERATING PROCEDURE

The Development Impact Model is a system for analyzing development proposals to determine their economic feasibility within the constraints imposed by natural determinants, physical delivery systems, public service systems, market factors and legal requirements. The following is an outline of the procedure for using the Development Impact Model.

DATA COLLECTION

A. Site Analysis

1. Base map with location of property outbounds and important features from property survey or county tax maps.
2. Municipal zoning map and code and development codes for analysis of legal constraints.
3. Municipal and county master plans for analysis of public intentions and policy.
4. Price of land from the developer or other source for use in the feasibility analysis.
5. Legal fees, interest on land, and other miscellaneous front-end costs from the developer for use in the feasibility analysis.

B. Natural Determinants and Coverage Analysis

1. County soil survey from Soil Conservation Service for soil series types, shallow to bedrock, seasonal high water table, alluvial soils.
2. Topographic maps of site and surrounding areas from U.S. Geological Survey or site survey for slope analysis.
3. Aerial photographs of site from U.S. Department of Agriculture, Aero Service, etc., for analysis of vegetation and other physical features.
4. Hydrology and floodplain location from the U.S. Army Corps of Engineers or the Soil Conservation Service for floodplain analysis.

C. Physical Systems Analysis

1. Streets and roads from municipal or county planning department/commission or state highway department, or a traffic study by a consultant.
   a. Right-of-way and cartway dimensions, including intersection approaches.
   b. Existing traffic volumes.
   c. Design capacities. (Intersection capacities are usually critical points.)
2. Water supply information from municipality, county, or private water company(ies).
   a. Location and excess capacity of water lines near the site.
   b. Supply costs and hook-up charges.
   c. If there is no feasible public water supply, determine the ground water supply and delivery costs from the Soil Conservation Service, state department of natural resources or its equivalent, or well drilling companies.
3. Sewer service information from the municipality or county authority.
   a. Location and excess capacity of sewer lines in the area.
   b. Sewer rental rates and hook-up charges.
   c. If there is no public sewer available, contact state department of health for package plant or septic tank requirements and costs.
4. Check location of electrical supply and cost of installing lines underground with the local power company.
5. Check location of telephone lines and cost of installing lines underground with the local telephone company. Determine whether this can be coordinated with electric lines for any savings.
6. Check location and hook-up costs for gas service with the local gas company.

D. Public Services and Revenues Analysis

1. Obtain a copy of the current municipal budget.

2. Check the level of service provided for by the budget for:

   a. Police

   b. Fire

   c. Recreation, parks

   d. Road maintenance

   e. Other

3. Check sources of municipal revenue, tax base, and rate.

   a. Property tax

      (1) Total revenue

      (2) Total assessed value

      (3) Assessment rate

      (4) Tax rate

   b. Income tax

      (1) Total revenue

      (2) Total personal income (average household income times number of households)

      (3) Tax rate

   c. Per capita and other taxes

      (1) Total taxable population

      (2) Tax rate

   d. State and federal subsidy

      (1) Amount of subsidy

      (2) Basis for subsidy

   e. Municipal debt

      (1) Current municipal debt

      (2) Legislative debt limit

4. School data

   a. School taxes - Obtain school budget and supporting data to determine:

      (1) Property tax

         (a) Total revenue

         (b) Total assessed value

         (c) Assessment rate

         (d) Tax rate

      (2) Income tax

         (a) Total revenue

         (b) Total personal income

         (c) Tax rate

(3) Per capita and other taxes

(a) Total taxable population

(b) Tax rate

(4) State and federal subsidy

(a) Amount of subsidy

(b) Basis for subsidy

(5) School debt

(a) Current debt

(b) Legislative debt limit

b. School capacity/enrollment

(1) Current enrollment

(2) Current capacity

c. Plans for school expansion

E. Market Analysis

1. Market comparables

a. Unit types (market mix: percent of each type available).

b. Sale prices and rents.

c. Unit sizes.

d. Special features.

2. Market absorption rates

3. Cyclical construction trends. (Is the market over-built or under-built now?)

4. Neighborhood characteristics

5. Regional location factors:

a. Access to work, shopping, recreation, etc.

b. Special amenities.

c. Major pollution sources, etc.

NATURAL SYSTEMS ANALYSIS

Dollar costs that may be incurred to overcome restrictions or meet performance standards should be particularly noted.

A. Analysis of Natural Restrictions

1. Vegetation

a. Acres in each vegetation classification (wooded, non-wooded).

b. Percentage of the site in each vegetation type.

2. Slopes

a. Acres in each slope classification (0-3%, 3-8%, 8-15%, 15-25%, 25+%).

b. Percentage of the site in each slope classification.

3. Seasonal high water table (SHWT)

a. Acres in each class of SHWT.

b. Percentage of the site in each SHWT class.

4. Shallow to bedrock

   a. Acres in each class of shallow to bedrock.

   b. Percentage of the site in each shallow to bedrock class.

5. Floodplain

   a. Acres of the site in the floodplain.

   b. Percentage of the site in the floodplain.

6. Composite development restrictions.

   a. Acres with development restrictions.

   b. Percentage of site with development restrictions.

B. Coverage Limits Analysis

This involves an analysis of the projected runoff of stormwater and the determination of impervious coverage limits or performance standard requirements.

LAND USE DESCRIPTION

Determine the types of units, market values, sizes and mix. These will be based on the developer's preferences and the market study.

SCHEMATIC SITE DESIGN

This is a blob diagram showing land use classifications (single-family, townhouses, garden apartments, commercial, open space, etc.) and the major circulation and utility lines. The amount of land shown in the various blobs should agree with the required unit mix determined in the Land Use Description phase. The schematic design should also respect the natural restrictions from the Natural Systems Analysis phase.

PHYSICAL DELIVERY SYSTEMS ANALYSIS

A. Roads

1. Length of major access and site circulation.

2. Cost of major access and circulation.

3. Cost of intersection improvements.

B. Water System

1. Length of major water lines on- and off-site.

2. Cost of major water lines.

3. Cost of other water system features if required (wells, pumps, storage tanks, treatment equipment, etc.)

C. Sewer System

1. Length of major sewer lines on- and off-site.

2. Cost of major sewer lines including manholes.

3. Cost of other sewer system features if required (pumping station, package plant, etc.).

D. Other Utilities

1. Length of other utility lines (telephone, electric, gas).

2. Cost of utility lines not paid by the utility companies (placing system underground, etc.).

DENSITY FEASIBILITY ANALYSIS

A. Upper limit of development density can be determined in a number of ways:

1. Maximum density allowable from zoning or PUD code. This is the legal maximum.

2. Maximum density possible within the constraints imposed by the market mix and lot sizes from the Land Use Description phase. This can be calculated using Equation 1.

$$D_m = \frac{100}{\Sigma\ \ell_n m_n} \qquad \text{(Equation 1)}$$

where D_m is the net density based on the market study mix,
ℓ is the lot size for the unit type (acres),
m is the mix for the unit type (%), and
n is the total number of unit types.

For instance, if the market study shows that the proposed development should include 80% (m_1) single family homes on half acre lots ($\ell_1 = .5$), 10% (m_2) townhouses at 10 per acre ($\ell_2 = .1$), and 10% (m_3) garden apartments at 14 per acre ($\ell_3 = .07$), then the net density would be calculated as follows:

$$D_m = 100 / \{(.5 \times 80) + (.1 \times 10) + (.07 \times 10)\}$$

$$= 100 / (40 + 1 + .7)$$

$$= 100 / 41.7$$

$$= 2.4 \text{ du/acre}$$

3. Maximum density determined from the coverage analysis in the Natural Systems Analysis phase and the market mix of the Land Use Description phase. Three impervious coverage (C) values are required: (a) the weighted average coverage per unit ($C\chi$), (b) the amount of impervious coverage allowed for the site ($C\alpha$), and (c) the amount of impervious coverage per acre for all major site improvements such as community buildings, major roads, etc. ($C\delta$).

A weighted average is calculated using the following equation:

$$\chi = \Sigma\ \frac{v_n\ k_n}{\Sigma\ v_n} \qquad \text{(Equation A)}$$

where v is the number of each variable or element,
k is the constant value of each variable or element, and
n is the number of different variables.

This equation can then be used to calculate the weighted average coverage per unit. For instance, suppose that the following is the recommended mix from the market study:

Unit Type	Unit Area	Stories	Net Cover	Parking, Patio, etc.	Total/ Unit	Mix
SF	1700 sf	1	1700 sf	1000 sf	2700 sf	10%
TH	1400 sf	2	700 sf	600 sf	1300 sf	30%
GA2	1000 sf	3	333 sf	600 sf	933 sf	30%
GA1	800 sf	3	267 sf	600 sf	867 sf	30%

Therefore, if the percent mix is the variable value (v) and the total coverage per unit is the constant value (k), then for the four (n) unit types the weighted average coverage per unit ($C\chi$) can be calculated as follows:

$$C\chi = \frac{v_1k_1 + v_2k_2 + v_3k_3 + v_4k_4}{v_1 + v_2 + v_3 + v_4}$$

$$= \frac{(10 \times 2700) + (30 \times 1300) + (30 \times 933) + (30 \times 867)}{10 + 30 + 30 + 30}$$

$$= \frac{27000 + 39000 + 27990 + 26010}{100}$$

$$= 12000/100 = 1200 \text{ sf/du}$$

The maximum density based on the cover model (D_i) can then be calculated using Equation 2 as follows:

$$D_i = \frac{(435.6 \times C\alpha) - C\delta}{Cx} \qquad \text{(Equation 2)}$$

As an example, assume that the allowable impervious coverage for the site based on the cover model ($C\alpha$) is 22%, the coverage per acre of all major site improvements ($C\delta$) is 1500 square feet per acre, and the weighted average coverage per unit is 1200 square feet per unit as above, then the maximum density would be calculated using Equation 2 as follows:

$$D_i = \frac{(435.6 \times 22) - 1500}{1200}$$

$$= \frac{9583.2 - 1500}{1200}$$

$$= 8083.2 / 1200$$

$$= 6.736 \text{ du/acre}$$

8. Break-even Density. This is the minimum project density at which the developer will be able to meet all costs and still make an acceptable profit. This is used to determine the relationships among the total site development cost (both on- and off-site), the average market value per unit, and the density.

   1. The basic break-even density equation is as follows:

$$D_e = \frac{L}{.0826 \times V \times A} \qquad \text{(Equation 3)}$$

   where L is the major site development costs ($),
   V is the average market value per unit ($/du), and
   A is the site area in acres.

   2. Variations of break-even equation.

      a. To find the average market value if the density and development cost is known:

$$V = L / (.0826 \times A \times D_e) \qquad \text{(Equation 3a)}$$

      b. To find the allowable development cost if the density and average market value is known:

$$L = V \times A \times D_e \times .0826 \qquad \text{(Equation 3b)}$$

   3. Determination of site development cost (L). This is the total of all front-end and major improvement costs. It includes:

      a. Cost of land.

      b. Interest on land.

      c. Planning fees.

      d. Legal fees, permits, etc.

      e. Sewer system.

      f. Water system.

      g. Roads and intersection improvements.

      h. Community buildings and recreation facilities.

      i. Other major site improvement costs.

   4. Determination of average unit market value (V). This is the weighted average of the market value of all units.

      a. V can be a one-number estimate for the whole project.

      b. A more accurate method of determining V is to use a weighted average of the project value of each type of unit based on the Land Use Description analysis and the market study.

c. To find the market value for rental apartments, multiply the expected annual rent by 7.28.

d. To find the total construction cost (bricks and boards plus unit share of major site development costs) from the market value, divide the market value by 1.661.

e. To find the unit share of the major site development costs from the market value, multiply the market value by .0826.

f. To find the total construction cost (bricks and boards plus unit share of major site development improvement costs) from the annual rent, multiply the annual rent by 4.3833.

C. Equilibrium break-even density. This analysis is used when the developer and the municipality (or school district) share the cost of major site improvements. The analysis is subject to the constraints that the project must generate a positive tax surplus if the developer pays all major site development costs.

With the equilibrium analysis the municipality invests all tax surplus generated by the project in the major site development costs. When the municipality pays part of the site development cost, the break-even density for the developer is lowered because his costs are lowered. The equilibrium analysis determines the minimum breakdown density where the developer just breaks even and the municipality reinvests all tax surplus. The analysis also determines the respective shares of costs for the developer and the municipality.

The equilibrium break-even density (D_b) is calculated using the following equation:

$$D_b = \frac{L}{A\ \{.0826\ V + 15\ ((V \times M \times R) + T - S)\}} \qquad \text{(Equation 4)}$$

where L is the major site development costs ($),
V is the average market value per unit ($/du),
A is the site area in acres,
M is the tax millage rate,
R is the assessment factor,
T is all other taxes paid by the occupants per unit, and
S is the unit service cost.

All of the other taxes paid by the occupants of the units would include income taxes, per capita taxes, etc. This value (T) is calculated on a per unit basis for the entire project. The unit service cost (S) is based on the average cost per unit for municipal services to the project. This is based on an analysis of the municipal budget. The same procedure would be used for school budget information if the equilibrium analysis was between the developer and the school district.

For instance, suppose that each of the variables has the following values:

L = $1,500,000
V = $25,000
A = 120 acres
M = .025
R = .6 (60%)
T = $250/unit
S = $600

The equilibrium break-even density would be calculated using Equation 4 as follows:

$$D_b = \frac{1,500,000}{120\ \{(.0826 \times 25,000) + 15\ ((25,000 \times .025 \times .6) + 250 - 600)\}}$$

$$= \frac{1,500,000}{120\ \{2065 + 15(375 + 250 - 600)\}}$$

$$= \frac{1,500,000}{120\ \{2065 + (15 \times 25)\}}$$

$$= \frac{1,500,000}{120\ (2065 + 375)}$$

$$= \frac{1,500,000}{120 \times 2440}$$

$$= \frac{1,500,000}{292,800}$$

$$= 5.12 \text{ du/acre}$$

To calculate the developer's share of the site development costs (L_d), use Equation 3b by substituting the equilibrium break-even density (D_b) for the break-even density (D_e) in the equation as follows:

$$L_d = V \times A \times D_b \times .0826 \qquad \text{(Equation 4a)}$$

The municipality's share of the site development costs (L_m) is simply calculated by subtracting the developer's share from the total site development costs:

$$L_m = L - L_d \qquad \text{(Equation 4b)}$$

Following through with the above example, the developer's share of the site development costs would be

L_d = \$25,000 x 120 acres x 5.12 du/acre x .0826

= \$1,268,736

and the municipality's share would be

L_m = \$1,500,000 - \$1,268,736

= \$231,264

There are two major practical limitations on the use of the equilibrium analysis:

1. Any investment of public funds in major site development must be politically expedient. The municipality might be able to invest in intersection improvements, off-site sewer lines, and other improvements which ostensibly benefit more of the public than just the residents of the site. If the municipal share of costs at the equilibrium density is \$200,000 but only \$100,000 in off-site public improvements can judiciously be made, then the other \$100,000 will remain as a tax surplus.

2. Separate taxing bodies normally will not and cannot exchange surplus revenues to balance out deficits. If a project is developing a \$100,000 municipal tax surplus, a \$100,000 school tax deficit will not be cancelled out.

DEVELOPMENT EXTERNALITIES

This section deals with costs (monetary and non-monetary) and revenues generated by a development. A detailed analysis of these externalities is often useful for planning purposes.

A. Traffic Generation

1. Daily or peak hour trip generation rates by unit type are applied to the total number of units contemplated for the project. This gives the total traffic generation.

2. Percentage allocation of the various access routes to the site is derived from origin-destination studies.

3. By combining 1 and 2 above the site-generated traffic load on any access point can be determined.

4. Comparison of existing traffic, design capacity, and site-generated traffic loads indicates the amount of anticipated congestion.

5. If a road or intersection improvement is needed to overcome the anticipated level of congestion, the cost will become part of the major site development cost. Either the municipality or the developer can pay for the improvements.

B. School Children

1. School children generation rates by unit type are applied to the total number of units contemplated to obtain an estimate of the total number of school children generated by the project.

2. The school budget will indicate the cost per student for operation. Multiply that cost by the total number of students generated for the projected school costs.

3. Project market value, property tax rates, and other tax information are used to determine the total school tax generated by the project.

4. Formulas for state and federal school subsidies are used to determine the additional subsidy created by the school children from the project.

5. The sum of items 3 and 4 above is compared to item 2 to determine the net surplus or deficit caused by the project.

C. Municipal Services

The revenue and operations structure must be investigated to find which services are supported by general taxes and which are supported by special user charges.

1. Typically sewer and water operations are separate from the general fund so that a property tax surplus cannot usually be used for sewer construction. The structure of municipal services must be investigated to sort this out.

2. Costs, revenues, and indicators of use on a per capita, per square foot, per linear foot, per dwelling, per acre, etc., basis for all municipal services should be investigated to find out which areas show a favorable balance for the proposed project (or an unfavorable balance as the case may be).

BIBLIOGRAPHY

BOOKS

Abrams, Daniel S.; Goldberg, Harry F.; and Lynn, Theodore S. REAL ESTATE LIMITED PARTNERSHIPS. Edited by David Clurman. New York: John Wiley & Sons, 1977.

Abrams, Edwin D., and Blackman, Edward B. MANAGING LOW AND MODERATE INCOME HOUSING. New York: Praeger Publishers, 1973.

Alexander, Christopher; Silverstein, Murray; Angel, Shlomo; Ishikawa, Sara; and Abrams, Denny. THE OREGON EXPERIMENT. New York: Oxford University Press for the Center for Environmental Structure, 1975.

The American Institute of Real Estate Appraisers. THE APPRAISER AND REAL ESTATE FEASIBILITY STUDIES. Chicago: American Institute of Real Estate Appraisers, 1972.

_____. RATIOS AND METHODOLOGY IN APARTMENT HOUSE VALUATION. Prepared by George Strauss and Harry Lewman. Chicago: American Institute of Real Estate Appraisers, 1975.

_____. RESIDENTIAL CONDOMINIUMS: A GUIDE TO ANALYSIS AND APPRAISAL. Chicago: American Institute of Real Estate Appraisers, 1976.

American Society of Planning Officials. TRANSFERABLE DEVELOPMENT RIGHTS. Proceedings of the Alfred Bettman Symposium and the 1974 ASPO National Planning Conference in Chicago. Edited by Frank S. Bangs and Conrad Bagne. Chicago: American Society of Planning Officials, 1975.

Anderson, Paul E. TAX FACTORS IN REAL ESTATE OPERATIONS. 4th ed. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1976.

Applebaum, William et al. GUIDE TO STORE LOCATION RESEARCH: WITH EMPHASIS ON SUPER MARKETS. Edited by Curt Kornblau. Reading, Mass.: Addison-Wesley Publishing Company, 1968.

Arthur Andersen & Co. FEDERAL TAXES AFFECTING REAL ESTATE. 4th ed. New York: Mathew Bender, 1978.

Ascher, Charles S. THE ADMINISTRATION OF PUBLICLY-AIDED HOUSING. Brussels, Belgium and The Hague: International Institute of Administrative Sciences and Martinus Nijhoff, 1971.

Baker, Martin S.; Kaming, Joseph S.; and Morrison, Richard E. ENVIRONMENTAL IMPACT STATEMENTS: A GUIDE TO PREPARATION AND REVIEW. New York: Practicing Law Institute, 1977.

Barnett, Jonathan, and Portman, John. THE ARCHITECT AS DEVELOPER. Edited by Beatrice E. Eckes and Jeremy Robinson. New York: McGraw-Hill Book Company, 1976.

Bartelli, L.J.; Klingebiel, A.A.; Baird, J.V.; and Heddleson, M.R., editors. SOIL SURVEYS AND LAND USE PLANNING. Madison, Wis.: Soil Service Society of America and American Society or Agronomy, 1966.

Benevolo, Leonardo. THE HISTORY OF THE CITY. Translated by Geoffrey Culverwell. Cambridge, Mass.: The MIT Press, 1980.

Black, J. Thomas; Borut, Allan; Byrne, Robert M.; and Morina, Michael J. UDAG PARTNERSHIPS: NINE CASE STUDIES. Washington, D.C.: The Urban Land Institute, 1980.

Black, J. Thomas; O'Connell, Donald; and Morina, Michael. DOWNTOWN OFFICE GROWTH AND THE ROLE OF PUBLIC TRANSIT. Washington, D.C.: Urban Land Institute, 1982.

Bowly, Devereux. THE POORHOUSE: SUBSIDIZED HOUSING IN CHICAGO, 1895-1976. Carbondale, Ill.: Southern Illinois University Press, 1978.

Boyce, Byrl N., ed. REAL ESTATE APPRAISAL TERMINOLOGY. Cambridge, Mass.: Ballinger Publishing Company, J. B. Lippincott Company for The American Institute of Real Estate Appraisers and The Society of Real Estate Appraisers, 1975.

Branch, Melville C. CITY PLANNING AND AERIAL INFORMATION. Cambridge, Mass.: Harvard University Press, 1971.

Brede, William J. CREATIVE THINKING IN REAL ESTATE. New York: Harper & Brothers, 1959.

Burchell, Robert W., ed. FRONTIERS OF PLANNED UNIT DEVELOPMENT: A SYNTHESIS OF EXPERT OPINION. New Brunswick, N.J.: Center for Urban Policy Research, Rutgers University, 1973.

Burchell, Robert W., and Listokin, David. THE ENVIRONMENTAL IMPACT HANDBOOK. New Brunswick, N.J.: Center for Urban Policy Research, Rutgers University, 1975.

Burchell, Robert W., and Listokin, David. FISCAL IMPACT HANDBOOK. New Brunswick, N.J.: Center for Urban Policy Research, Rutgers University, 1978.

Callender, John Hancock, ed. TIME-SAVER STANDARDS: A HANDBOOK OF ARCHITECTURAL DESIGN. 4th ed. New York: McGraw-Hill Book Company, 1966.

Cartwright, John M. GLOSSARY OF REAL ESTATE LAW. Rochester, N.Y.: The Lawyers Co-operative Publishing Co. and Bancroft-Whitney Co., 1972.

Catanese, Anthony J. SCIENTIFIC METHODS OF URBAN ANALYSIS. Urbana, Ill.: University of Illinois Press, 1972.

Catanese, Anthony James, and Farmer, W. Paul, editors. PERSONALITY, POLITICS, AND PLANNING: HOW CITY PLANNERS WORK. Beverly Hills, Ca.: Sage Publications, Inc., 1978.

Clurman, David. THE BUSINESS CONDOMINIUM: A NEW FORM OF BUSINESS PROPERTY OWNERSHIP. New York: John Wiley & Sons, 1973.

Coffman, C. Dewitt. MARKETING FOR A FULL HOUSE; A COMPLETE GUIDE TO PROFITABLE HOTEL/MOTEL OPERATIONAL PLANNING. Edited by Helen J. Recknagel. Ithaca, N.Y.: Cayauga Press for Cornell University, 1972.

Collier, Keith. CONSTRUCTION CONTRACTS. Reston, Va.: Reston Publishers, 1979.

The Conference Board. SALES FORECASTING. New York: The Conference Board, Inc., 1978.

Conway, H. M.; Liston, L. L.; and Saul, R. J. INDUSTRIAL PARK GROWTH: AN ENVIRONMENTAL SUCCESS STORY. Atlanta: Conway Publications, 1979.

Coombs, Clyde H. "Theory and Methods of Social Measurement." In RESEARCH METHODS IN THE BEHAVIORAL SCIENCES, pp.471-535. Edited by Leon Festlinger and Daniel Katz. New York: Holt, Rinehart and Winston, 1953.

Coopers & Lybrand. TAX PLANNING FOR REAL ESTATE TRANSACTIONS. Washington, D.C.: The Farm and Land Institute of the National Association of Realtors, 1978.

Cornwell, Richard E. THE MINIWAREHOUSE: A GUIDE FOR INVESTORS AND MANAGERS. Chicago: Institute of Real Estate Management, 1975.

Cox, William E., Jr. INDUSTRIAL MARKETING RESEARCH. Edited by Frederick E. Webster, Jr. New York: John Wiley & Sons, 1979.

Coxe, Weld. MARKETING ARCHITECTURAL AND ENGINEERING SERVICES. New York: Van Nostrand Reinhold Company, 1971.

Daniel, Wayne W. THE USE OF RANDOM DIGIT DIALING IN TELEPHONE SURVEYS: AN ANNOTATED BIBLIOGRAPHY. Monticello, Ill.: Vance Bibliographies, 1979.

Deasy, C.M. DESIGN FOR HUMAN AFFAIRS. Cambridge, Mass.: Schenkman Publishing Company, 1974.

DeChiara, Joseph, and Callender, John. TIME-SAVER STANDARDS FOR BUILDING TYPES. 2nd ed. New York: McGraw-Hill, Inc., 1980.

DeChiara, Joseph, and Koppelman, Lee E. SITE PLANNING STANDARDS. New York: McGraw-Hill Book Company, 1978.

Dillman, Don A. MAIL AND TELEPHONE SURVEYS. New York: Wiley & Sons, 1978.

Dilmore, Gene. THE NEW APPROACH TO REAL ESTATE. Englewood Cliffs, N.J.: Prentice-Hall, 1971.

Dombal, Robert W. RESIDENTIAL CONDOMINIUMS: A GUIDE TO ANALYSIS AND APPRAISAL. Chicago: American Institute of Real Estate Appraisers of the National Association of Realtors, 1976.

EARTH SHELTERED COMMUNITY DESIGN ENERGY-EFFICIENT RESIDENTIAL DEVELOPMENT. Underground Space Center, University of Minnesota, New York: Van Nostrand Reinhold Company, 1981.

Eckert, Fred W. ECONOMIC FACTORS AND CASE STUDIES IN HOTEL AND MOTEL VALUATION. Chicago: The American Institute of Real Estate Appraisers, 1962.

THE ECONOMICS OF PROPERTY RIGHTS. Cambridge, Mass.: Cambridge Press, 1980.

Glassman, Sidney. A GUIDE TO RESIDENTIAL MANAGEMENT. 3rd ed. 2nd rev. Washington, D.C.: Washington National Association of Homebuilders, 1978.

Gosling, David, and Maitland, Barry. DESIGN AND PLANNING OF RETAIL SYSTEMS. New York: Whitney Library of Design, 1976.

Greenberg, Michael R. A PRIMER ON INDUSTRIAL ENVIRONMENTAL IMPACT. New Brunswick, N.J.: The Center for Urban Policy Research, Rutgers University, 1979.

Greenburg, Michael R., et al. A PRIMER ON INDUSTRIAL ENVIRONMENTAL IMPACT. Piscataway, N.J.: The Center for Urban Policy Research, Rutgers University, 1979.

Greenberg, Michael R.; Krueckeberg, Donald A.; and Michaelson, Connie O. LOCAL POPULATION AND EMPLOYMENT PROJECTION TECHNIQUES. Piscataway, N.J.: The Center for Urban Policy Research, Rutgers University, 1979.

Greer, Gaylon E. THE REAL ESTATE INVESTOR AND THE FEDERAL INCOME TAX. New York: Ronald Press, John Wiley & Sons, 1978.

Griffin, C.W. DEVELOPMENT BUILDING: THE TEAM APPROACH. New York: Halsted Press, John Wiley & Sons, Inc. for The American Institute of Architects, 1972.

_____. ENERGY CONSERVATION IN BUILDINGS: TECHNIQUES FOR ECONOMICAL DESIGN. Washington, D.C.: The Construction Specifications Institute, 1974.

Griffin, Mary, and Zeisel, John. CHARLESVIEW HOUSING: A DIAGNOSTIC EVALUATION. Cambridge, Mass.: Architecture Research Office, Harvard University, 1975.

Group for Environmental Education, Inc. OUR MAN-MADE ENVIRONMENT. Philadelphia: Group for Environmental Education, Inc., 1970.

Groves, Robert M., and Kahn, Robert L. SURVEYS BY TELEPHONE - A NATIONAL COMPARISON WITH PERSONAL INTERVIEWS. A volume in the Quantitative Studies in Social Relations Series. New York: Academic Press, Inc., 1979.

Ehrlich, Paul R., and Ehrlich, Anne H. POPULATION RESOURCES ENVIRONMENT. Edited by Donald Kennedy and Roderie B. Park. San Francisco: W. H. Freeman and Company, 1970.

Ellis, Robert M., ed. REAL ESTATE INVESTMENT ANALYSIS. Los Angeles: Coldwell Banker, Inc., 1976.

ENERGY PLANT SITES: COMMUNITY PLANNING FOR LARGE PROJECTS. Atlanta: Conway Publications, Inc., 1980.

Everett, E. Roger, and Kinnard, William N. A GUIDE TO APPRAISING APARTMENTS. 5th ed. Chicago: Society of Real Estate Appraisers, 1979.

Falconer, Peter, and Drury, Jolyon. BUILDING AND PLANNING FOR INDUSTRIAL STORAGE AND DISTRIBUTION. New York: The Architectural Press, John Wiley & Sons, Inc., 1975.

Find/SVP. FINDEX: THE DIRECTORY OF MARKET RESEARCH REPORTS, STUDIES, AND SURVEYS. New York: The Information Clearinghouse, 1980.

Forrester, Jay W. PRINCIPLES OF SYSTEMS. 2nd pre. ed. Cambridge, Mass.: Wright-Allen Press, Inc., 1976.

Friends of the Earth. PROGRESS AS IF SURVIVAL MATTERED: A HANDBOOK FOR A CONSERVER SOCIETY. Edited by Hugh Nash. San Francisco: Friends of the Earth, 1977.

Gallup, George. THE SOPHISTICATED POLL WATCHER'S GUIDE. Princeton, N.J.: Princeton Press, 1976.

Gettel, Ronald E. REAL ESTATE GUIDELINES AND RULES OF THUMB. New York: McGraw-Hill Book Company, 1976.

_____. YOU CAN GET YOUR REAL ESTATE TAXES REDUCED. New York: McGraw-Hill Book Company, 1977.

Gimmy, Arthur E. TENNIS CLUBS AND RACQUET SPORT PROJECTS. A GUIDE TO APPRAISAL, MARKET ANALYSIS, DEVELOPMENT AND FINANCING. Chicago: American Institute of Real Estate Appraisers, 1978.

Gimmy, Arthur E. TENNIS CLUBS AND RACQUET SPORT PROJECTS: A GUIDE TO APPRAISAL, MARKET ANALYSIS, DEVELOPMENT AND FINANCING. Chicago: American Institute of Real Estate Appraisers, 1979.

Gruen, Nina Jaffe, and Gruen, Claude. LOW AND MODERATE INCOME HOUSING IN THE SUBURBS: AN ANALYSIS FOR THE DAYTON, OHIO REGION. Foreword by William L.C. Wheaton. New York: Praeger Publishers, 1972.

Hair, Joseph F. Jr.; Anderson, Ralph E.; Tatham, Ronald E.; and Grablowski, Bernie J. MULTIVARIATE DATA ANALYSIS WITH READINGS. Tulsa, Okl.: The Petroleum Publishing Company, 1979.

Halpin, Daniel W., and Woodhead, Ronald W. CONSTRUCTION MANAGEMENT. New York: John Wiley & Sons, Inc., 1980.

Harkness, Sarah P., and Groom. James N. BUILDING WITHOUT BARRIERS FOR THE DISABLED. New York: Whitney Library of Design, Watson-Guptill Publications for the Architects Collaborative, Inc., 1976.

Harrison, Harold S. HARRISON ON EMINENT DOMAIN - A GUIDE FOR APPRAISERS AND OTHERS. Chicago: Society of Real Estate Appraisers, 1976.

Hayes, John R. THE COMPLETE PROBLEM SOLVER. Philadelphia, Penn.: The Franklin Institute Press, 1981.

Holleb, Doris B. SOCIAL & ECONOMIC INFORMATION FOR URBAN PLANNING. Chicago: Center for Urban Studies of the University of Chicago, 1969.

Hopf, Peter S., ed. HANDBOOK OF BUILDING SECURITY PLANNING AND DESIGN. New York: McGraw-Hill Book Company, 1979

Hughes, James W., ed. METHODS OF HOUSING ANALYSIS: TECHNIQUES AND CASE STUDIES. New Brunswick, N.J.: The Center for Urban Policy Research, Rutgers University, 1977.

Hughes, James W., and Bleakly, Kenneth D. Jr. URBAN HOMESTEADING. New Brunswick, N.J.: The Center for Urban Policy Research, Rutgers University, 1975.

Hughes, James W.; Roistacher, Elizabeth; and Sternlieb, George. TAX SUBSIDIES AND HOUSING INVESTMENT. New Brunswick, N.J.: The Center for Urban Policy Research, Rutgers University, 1976.

INDUSTRIAL DEVELOPMENT. New York: Conway Publications, January/February, 1979.

Institute of Real Estate Management. MANAGING THE OFFICE BUILDING. Chicago: Institute of Real Estate Management, 1980.

International Council of Shopping Centers. MARKET RESEARCH FOR SHOPPING CENTERS. New York: International Council of Shopping Centers, n.d.

Isard, Walter; Choguill, Charles L.; Kissin, John; Seyfarth, Richard H.; and Tatlock, Richard. ECOLOGIC-ECONOMIC ANALYSIS FOR REGIONAL DEVELOPMENT. New York: The Free Press, Collier-MacMillian Company, 1972.

Isard, Walter, and Liossatos, Panagis. SPATIAL DYNAMICS AND OPTIMAL SPACE-TIME DEVELOPMENT. Studies in Regional and Urban Economics, Vol.4. New York: North-Holland Publishing Company, 1979.

Jaffe, Austin J. PROPERTY MANAGEMENT IN REAL ESTATE INVESTMENT DECISION-MAKING. New York: Ballinger Press, 1979.

Jones, Rees L., and Rando, Guy L. GOLF COURSE DEVELOPMENTS. Washington, D.C.: Urban Land Institute, 1974.

Kahrl, William L. PLANNING AND OPERATING A SUCCESSFUL FOOD SERVICE OPERATION. New York: Chain Store Publishing Corporation, 1973.

Katona, George. ESSAYS ON BEHAVORIAL ECONOMICS. Ann Arbor, Mich.: The Institute for Social Research, The University of Michigan, 1980.

Katz, Robert D. DESIGN OF THE HOUSING SITE: A CRITIQUE OF AMERICAN PRACTICE. Urbana, Ill.: Small Homes Council-Building Research Council, University of Illinois, 1966.

Kau, James B., and Sirmans, C. F. TAX PLANNING FOR REAL ESTATE INVESTORS. Englewood Cliffs, N.J.: Prentice-Hall, 1980.

Kelley, Edward N. PRACTICAL APARTMENT MANAGEMENT. Chicago: Institute of Real Estate Management of the National Association of Realtors, 1976.

Kerth, Albert L. A NEW LIFE FOR THE ABANDONED SERVICE STATION. n.p., 1974.

Kinnard, William N., and Messner, Stephen D. INDUSTRIAL REAL ESTATE. 2nd ed. Washington, D.C.: Society of Industrial Realtors, 1973.

Klepper, Martin. IMPACT OF ENERGY PROBLEMS ON REAL ESTATE. New York: Practicing Law Institute, 1979.

Kliment, Stephen A. CREATIVE COMMUNICATIONS FOR A SUCCESSFUL DESIGN PRACTICE. New York: Whitney Library of Design, Watson-Guptill Publications, 1977.

Korobkin, Barry J. IMAGES FOR DESIGN: COMMUNICATING SOCIAL SCIENCE RESEARCH TO ARCHITECTS. Cambridge, Mass.: Architecture Research Office, Harvard University, 1976.

Kreider, Jan F., and Kreith, Frank. SOLAR HEATING AND COOLING: ENGINEERING, PRACTICAL DESIGN, AND ECONOMICS. rev.ed. Washington, D.C. and New York: Hemisphere Publishing Co. and McGraw-Hill Book Company, 1977.

Land Design/Research, Inc. COST EFFECTIVE SITE PLANNING: SINGLE FAMILY DEVELOPMENT. Washington, D.C.: National Association of Home Builders, 1976.

Lansing, John B.; Marans, Robert W.; and Zehner, Robert B. PLANNED RESIDENTIAL ENVIRONMENTS. Ann Arbor, Mich.: Survey Research Center, Institute for Social Research, The University of Michigan, 1970.

Laurie, Gini. HOUSING AND HOME SERVICES FOR THE DISABLED: GUIDELINES AND EXPERIENCES IN INDEPENDENT LIVING. Hagerstown, Md.: Harper & Row, Publishers, Inc., 1977.

Legget, Robert F. CITIES AND GEOLOGY. New York: McGraw-Hill Book Company, 1973.

LEGISLATIVE CLIMATES FOR ECONOMIC DEVELOPMENT. Atlanta: Conway Publications, Inc., 1980

Lewis, Walter H.; Olin, Harold Bennett; and Schmidt, John L. CONSTRUCTION: PRINCIPLES, MATERIALS & METHODS. Chicago, Ill., and Danville, Ill.: American Savings and Loan Institute Press and Interstate Printers and Publishers, Inc., 1972.

Lukens, Reaves C. THE APPRAISER AND REAL ESTATE FEASIBILITY STUDIES. Chicago: The American Institute of Real Estate Appraisers of the National Association of Real Estate Boards, 1972.

Lundberg, Donald E. THE HOTEL AND RESTAURANT BUSINESS. Edited by Jule Wilkinson. Chicago: Institutions/Volume Feeding Management Magazine, 1970.

_____. THE TOURIST BUSINESS. Edited by Jule Wilkinson. Chicago: Institutions/Volume Feeding Management Magazine, 1972.

Lynch, Kevin A THEORY OF GOOD CITY FORM. Cambridge, Mass.: The MIT Press, 1981.

Lynch, Kevin. WHAT TIME IS THIS PLACE? Cambridge, Mass.: The MIT Press, 1972.

Lyon, Victor L.; Messner, Stephen D.; and Schreiber, Irving. MARKETING INVESTMENT REAL ESTATE: FINANCE TAXATION TECHNIQUES. Edited by Peg Keilholz. Chicago: Realtors National Marketing Institute of the National Association of Realtors, 1975.

Macaulay, David. UNDERGROUND. Boston: Houghton Mifflin Company, 1976.

McCarthy, George D., and Healy, Robert E. VALUING A COMPANY: PRACTICES AND PROCEDURES. New York: John Wiley & Sons, 1971.

McGavin, Charles T. HOTEL-MOTEL PARKING GUIDE. Ithaca, N.Y.: The Cornell Hotel & Restaurant Administration Quarterly, 1969.

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McGuinness, William J., and Stein, Benjamin. MECHANICAL AND ELECTRICAL EQUIPMENT FOR BUILDINGS. 5th ed. New York: John Wiley & Sons, Inc., 1971.

McHale, John. THE ECOLOGICAL CONTEXT. New York: George Braziller, Inc., 1970.

McHarg, Ian L. DESIGN WITH NATURE. Garden City, N.Y.: The Natural History Press for the American Museum of Natural History, 1969.

McPhee, John. ENCOUNTERS WITH THE ARCHDRUID. New York: Farrar, Straus, and Giroux, 1971.

MARKETING INDUSTRIAL BUILDINGS AND SITES. Atlanta: Conway Publications, Inc., 1980.

MARKETING RESEARCH FOR SHOPPING CENTERS. New York: International Council of Shopping Centers, n.d.

May, Eleanor G. A HANDBOOK FOR BUSINESS ON THE USE OF GOVERNMENT STATISTICS. Charlottesville, Va.: Tayloe Murphy Institute, University of Virginia, 1979.

Mazria, Edward. THE PASSIVE SOLAR ENERGY BOOK: EXPANDED PROFESSIONAL EDITION. Emmaus, Pa.: Rodale Press, 1979.

Messner, Stephen D.; Boyce, Byrl N.; Trimble, Harold G.; and Ward, Robert L. ANALYZING REAL ESTATE OPPORTUNITIES: MARKET AND FEASIBILITY STUDIES. Edited by Peg Keilholz. Chicago: Realtors National Marketing Institute of the National Association of Realtors, 1977.

Morris, A.E.J. HISTORY OF URBAN FORM: BEFORE THE INDUSTRIAL REVOLUIONS. New York: John Wiley & Sons, 1979.

Motel/Motor Inn Journal. MODERN MOTELKEEPING. Temple, Tex.: Tourist Court Journal Co., Inc., 1971.

Muehrcke, Phillip C. MAP USE-READING, ANALYSIS, & INTERPRETATION. Madison, Wis.: JP Publications, 1979.

Nairn, Ian. THE AMERICAN LANDSCAPE: A CRITICAL VIEW. New York: Random House, Inc., 1965.

The National Association of Home Builders. ALTERNATIVES TO PUBLIC SEWER. Washington, D.C.: National Association of Home Builders, 1978.

The National Association of Home Builders. LAND DEVELOPMENT HANDBOOK. Washington, D.C.: The National Association of Home Builders, 1969.

National Trust for Historic Preservation. ECONOMIC BENEFITS OF PRESERVING OLD BUILDINGS. Washington, D.C.: The Preservation Press, 1976.

New Jersey. HOUSING & SUBURBS: FISCAL & SOCIAL IMPACT OF MULTIFAMILY DEVELOPMENT. William V. Musto, Chairman. New Jersey: County & Municipal Government Study Commission of the State of New Jersey, 1974.

Norcross, Carl. TOWNHOUSES & CONDOMINIUMS: RESIDENTS' LIKES AND DISLIKES. Washington, D.C.: The Urban Land Institute, 1973.

O'Donovan, Thomas R. AMBULATORY SURGICAL CENTERS: DEVELOPMENT AND MANAGEMENT. Germantown, Md.: Aspen Systems Corporation, 1976.

Olgyay, Victor. DESIGN WITH CLIMATE: BIOCLIMATIC APPROACH TO ARCHITECTURAL REGIONALISM. Princeton, N.J.: Princeton University Press, 1963.

Orr, James F. MALLS, PEDESTRIAN MALLS, AND SHOPPING CENTERS: A SELECTED BIBLIOGRAPHY, WITH ANNOTATIONS. Monticello, Ill.: Vance Bibliographies, 1979.

Palmer, Mickey A. THE ARCHITECT'S GUIDE TO FACILITY PLANNING. Washington, D.C.: The American Institute of Architects. New York: McGraw-Hill Publication, 1981.

Pivar, William H. REAL ESTATE ETHICS. Chicago: Real Estate Education Company, 1979.

Porter, Douglas R., and Cole, Susan. AFFORDABLE HOUSING: TWENTY EXAMPLES FROM THE PRIVATE SECTOR. Washington, D.C.: Urban Land Institute, 1982.

PORTFOLIO OF AIRPORT STUDIES. Atlanta: Conway Publications, Inc., Microfiche and Microfilm Services, 1980.

PORTFOLIO OF TRAVEL INVESTMENT STUDIES. Atlanta: Conway Publications, Inc., Microfiche and Microfilm Services, 1980.

Ramati, Raquel. HOW TO SAVE YOUR OWN STREET. New York: Doubleday & Company, Inc., 1981.

Rams, Edwin M. ANALYSIS AND VALUATION OF RETAIL LOCATIONS. Reston, Va.: Reston Publishing Company, Inc., 1976.

_____. REAL ESTATE CONSULTANT'S HANDBOOK. Reston, Va.: Reston Publishing Company, Inc., Prentice Hall, 1978.

Randall, William J. APPRAISAL GUIDE FOR MOBILE HOME PARKS. Chicago: Finance Division of the Mobile Homes Manufacturers Association, 1966.

Ratcliffe, Richard U. VALUATION FOR REAL ESTATE DECISIONS. Santa Cruz, Ca.: Democrat Press, 1972.

READINGS IN REAL ESTATE INVESTMENT ANALYSIS. Vol. 1. Cambridge, Mass.: Ballinger Publishing Company, J.B. Lippincott Company for the American Institute of Real Estate Appraisers, 1977.

REAL ESTATE COUNSELING - A PROFESSIONAL APPROACH TO PROBLEM SOLVING: ARTICLES AND SELECTED CASE HISTORIES. Chicago: The American Society of Real Estate Counselors, 1976.

Real Estate Research Corp. INFILL/DEVELOPMENT STRATEGIES. Washington, D.C.: Urban Land Institute and American Planning Association, 1982.

Reilly, William K., ed. THE USE OF LAND: A CITIZEN'S POLICY GUIDE TO URBAN GROWTH. New York: Thomas Y. Crowell, 1973.

Reinhart, Hazel; Moyer, Keith; and Moyer, Harriet. HOW TO USE CENSUS TRACT DATA IN RELATION TO HOUSING NEEDS. Madison, Wis.: Division of Economic & Environmental Development, UW-Extension, University of Wisconsin - Madison, 1973.

The Research Division of the Urban Land Institute. UDAG PARTNERSHIPS: NINE CASE STUDIES. Washington, D.C.: Urban Land Institute, 1980.

Richard L. Ragatz Associates, Inc. RECREATIONAL PROPERTIES. Eugene, Ore.: Richard L. Ragatz Associates, Inc., 1974.

Roberts, Duane F. MARKETING AND LEASING OF OFFICE SPACE. Chicago: Institute of Real Estate Management of the National Association of Realtors, 1979.

Rose, Jerome G. LANDLORDS & TENANTS: A COMPLETE GUIDE TO THE RESIDENTIAL RENTAL RELATIONSHIP. New Brunswick, N.J.: Transaction Books, 1973.

Roulac, Stephen E. MODERN REAL ESTATE INVESTMENT. San Francisco: Property Press, 1976.

Rubenstein, Harvey M. A GUIDE TO SITE AND ENVIRONMENTAL PLANNING. New York: John Wiley & Sons, Inc., 1969.

Rushmore, Stephen. THE VALUATION OF HOTELS AND MOTELS. Chicago: American Institute of Real Estate Appraisers of the National Association of Realtors, 1978.

_____. THE VALUATION OF HOTEL AND MOTELS. Chicago: American Institute of Real Estate Appraisers, 1979.

Sacks, Thomas F. A COMPLETE GUIDE TO BUILDING AND PLANT MAINTENANCE. Prentice Hall, n.d.

Sagalyn, Lynne B., and Sternlieb, George. ZONING AND HOUSING COSTS: THE IMPACT OF LAND-USE CONTROLS ON HOUSING PRICE. New Brunswick, N.J.: Center for Urban Policy Research, Rutgers University, 1972.

San Luis, Edward. OFFICE AND OFFICE BUILDING SECURITY. Security World Publishing Company, n.d.

Saphier, Michael. PLANNING THE NEW OFFICE. New York: McGraw-Hill Book Company, 1978.

Schreiber, Arthur F.; Gatons, Paul K.; and Clemmer, Richard B. ECONOMICS OF URBAN PROBLEMS: AN INTRODUCTION. 2nd ed. Boston: Houghton Mifflin Company, 1976.

Schueller, Wolfgang. HIGH-RISE BUILDING STRUCTURES. New York: Wiley & Sons, 1977.

Seldin, Maury. LAND INVESTMENT. Homewood, Ill.: Dow-Jones-Irwin, Inc., 1975.

_____. REAL ESTATE INVESTMENT FOR PROFIT THROUGH APPRECIATION. Reston, Va.: Reston Publishing Company, 1980.

Shenkel, William M. MARKETING REAL ESTATE. Englewood Cliffs, N.J.: Prentice-Hall, 1980.

Small, Robert, and Untermann, Richard. SITE PLANNING FOR CLUSTER HOUSING. New York: Litton Educational Publishing, Inc. and Van Nostrand Reinhold Company, 1977.

Smith, John T., ed. MANUAL OF COLOR AERIAL PHOTOGRAPHY. Falls Church, Va.: American Society of Photogrammetry, 1968.

Smolkin, William R. A MARKETING PLAN FOR HOME BUILDERS. Edited by John C. Pollock. Washington, D.C.: National Association of Home Builders and Barrett Division, Allied Chemical Corporation, 1966.

Society of Real Estate Appraisers. A GUIDE TO APPRAISING FOR FEDERAL AGENCIES. Chicago: Society of Real Estate Appraisers, 1980.

_____. REAL ESTATE APPRAISAL PRINCIPLES AND TERMINOLOGY. 2nd ed. Kingsport, Tenn.: Kingsport Press, 1971.

SOIL SURVEYS AND LAND USE PLANNING. Edited by L.J. Bartelli, A.A. Klingebiel, J.V. Baird, and M.R. Heddleson. Madison, Wis.: Soil Service Society of America and American Society of Agronomy, 1966.

Stein, Richard G. ARCHITECTURE AND ENERGY. Garden City, N.Y.: Anchor Press and Doubleday, 1977.

Sternlieb, George; Roistacher, Elizabeth; and Hughes, James W. TAX SUBSIDIES AND HOUSING DEVELOPMENT A FISCAL COST-BENEFIT ANALYSIS. New Brunswick, N.J.: Center for Urban Policy Research, Rutgers University, 1976.

Stogaugh, Robert, and Yergin, Daniel, editors. ENERGY FUTURE: REPORT OF THE ENERGY PROJECT AT THE HARVARD BUSINESS SCHOOL. New York: Random House, 1979.

Stokey, Edith, and Zeckhauser, Richard. A PRIMER FOR POLICY ANALYSIS. New York: W.W. Norton & Company, Inc., 1978.

Strobl, Walter M. CRIME PREVENTION THROUGH PHYSICAL SECURITY.

STRUCTURING REAL ESTATE INVESTMENTS. San Francisco: Property Press, Questor Associates, 1978.

Sumichrast, Michael, and Seldin, Maury. HOUSING MARKETS: THE COMPLETE GUIDE TO ANALYSIS AND STRATEGY FOR BUILDERS, LENDERS, AND OTHER INVESTORS. Homewood, Ill.: n.p., 1977.

Thompson, Grant P. BUILDING TO SAVE ENERGY. Law Institute, State and Local Energy Conservation Project. Eallinger Publishing Co., 1980.

Tuchfarber, Alfred J., and Klecka, William R. RANDOM DIGIT DIALING: LOWERING THE COSTS OF VICTIMIZATION SURVEYS. Washington, D.C.: The Police Foundation, 1976.

Turabian, Kate L. A MANUAL FOR WRITERS OF TERM PAPERS, THESES, AND DISSERTATIONS. 4th ed. Chicago: The University of Chicago Press, 1973.

Umeh, John A. FEASIBILITY AND VIABILITY APPRAISAL. Ibadan, Nigeria: Onibonoje Publishers, 1977.

U.S. Department of Housing and Urban Development. STUDY ON TAX CONSIDERATIONS IN MULTI-FAMILY HOUSING INVESTMENTS. Washington, D.C.: Government Printing Ofice, 1972.

The Urban Land Institute. ADAPTIVE USE: DEVELOPMENT ECONOMICS, PROCESS, AND PROFILES. Washington, D.C.: Urban Land Institute, 1978.

_____. THE DOLLARS & CENTS OF SHOPPING CENTERS: 1972. Washington, D.C.: Urban Land Institute, 1972.

_____. DOWNTOWN DEVELOPMENT HANDBOOK. Washington, D.C.: Urban Land Institute, 1980.

_____. ENERGY EFFICIENT COMMUNITY DEVELOPMENT TECHNIQUES. Edited by Carla S. Crane and Joseph D. Steller, Jr. Washington, D.C.: Urban Land Institute, 1981.

_____. INDUSTRIAL DEVELOPMENT HANDBOOK. Community Builders Handbook Series. Washington, D.C.: Urban Land Institute, 1975.

_____. OFFICE DEVELOPMENT HANDBOOK. Washington, D.C.: Urban Land Institute, 1982.

_____. RESIDENTIAL DEVELOPMENT HANDBOOK. Community Builders Handbook Series. Washington, D.C.: Urban Land Institute, 1978.

_____. SHOPPING CENTER DEVELOPMENT HANDBOOK. Community Builders Handbook Series. Washington, D.C.: Urban Land Institute, 1977.

Warner, Raynor M. NEW PROFITS FROM OLD BUILDINGS. New York: McGraw-Hill Publishers, n.d.

Warwick, Donald P., and Lininger, Charles A. THE SAMPLE SURVEY: THEORY AND PRACTICE. New York: McGraw-Hill Book Company, 1975.

THE WEATHER HANDBOOK. 2nd ed. Atlanta: Conway Publications, 1980.

Weaver, Clifford L., and Babcock, Richard F. CITY ZONING: THE ONCE AND FUTURE FRONTIER. Chicago: American Planning Association, 1979.

Weinberger, Michael J., ed. ESTATE AND GIFT TAX AFTER TAX REFORM. New York: Practicing Law Institute, 1977.

Weisberg, Herbert F., and Bowen, Bruce D. AN INTRODUCTION TO SURVEY DESIGN AND DATA ANALYSIS. San Francisco: Freeman and Co., 1977.

Wendt, Paul F., and Cerf, Alan R. REAL ESTATE INVESTMENT ANALYSIS AND TAXATION. 2nd ed. New York: McGraw-Hill Book Company, 1979.

Wenner, S. Albert. PROMOTION & MARKETING FOR SHOPPING CENTERS. International Council of Shopping Centers, 1980.

Wiley, Robert J. REAL ESTATE INVESTMENT ANALYSIS AND STRATEGY. New York: John Wiley & Sons, Inc., 1977.

Zeisel, John. SOCIOLOGY AND ARCHITECTURAL DESIGN. New York: Russell Sage Foundation, 1975.

Zuwaylif, Fadil H. GENERAL APPLIED STATISTICS. Menlo Park, Ca.: Addison-Wesley, 1972.

ARTICLES

Abboud, Samir. "An Analytical Process of Real Estate Projects." THE APPRAISAL JOURNAL 47 (July 1979): 412-26.

Archer, Wayne R. "Valuation Under Uncertainty: Will the Real Highest and Best Use Please Stand Up?" THE REAL ESTATE APPRAISER 43 (May-June 1977): 32-40.

Bohling. "Highest and Best Use: A New Definition, a New Opportunity." THE REAL ESTATE APPRAISER 42 (January-February 1976): 33-37.

Crouch, William. "A Perspective Look at Highest and Best Use." THE APPRAISAL JOURNAL 34 (April 1966): 166-76.

Davis, Warren E. "A Primer on Locating Facilities in Foreign Countries." INDUSTRIAL DEVELOPMENT (May-June 1979): 10-14.

DRAFT, EIR SEWER TRUNK CAPACITY EXPANSION PROJECT. San Francisco: Gruen Gruen & Associates, 1979.

FISCAL ANALYSIS OF ALTERNATIVE GROWTH SCENARIOS. San Francisco: Gruen Gruen & Associates, 1979.

Graaskamp, James A. "A Rational Approach to Feasibility Analysis." THE APPRAISAL JOURNAL 40 (October 1972): 513-21.

IREM RESEARCH STUDY LEASE ESCALATORS AND OTHER PASS-THROUGH CLAUSES. Chicago: Institute of Real Estate Management, 1979.

Kahn, Sanders A. "The Entrepreneur Revisited." THE APPRAISAL JOURNAL 41 (January 1973): 113-18.

Kinnard, William N. Jr. "New Thinking in Appraisal Theory." THE REAL ESTATE APPRAISER 32 (August 1966): 2-3.

Klein, Philip E. "Feasibility of Shopping Center Development." SHOPPING CENTER REPORT, June 1976.

Large, Donald W. "This Land Is Whose Land? Changing Concepts of Land As Property." WISCONSIN LAW REVIEW, 1973.

Mathey, C.J. "Facility Planning with Screening Forms." INDUSTRIAL DEVELOPMENT (March-April 1979): 2-6.

Mathey, Charles J. "A 'Cornerstone' for Facility Strategy...or Developing Facility Strategy is Too Important To Be Left to Top Management." INDUSTRIAL DEVELOPMENT (May-June 1978): 2-4.

Montgomery, J. Thomas. "The Appraiser's Dilemma: Wedding Investor Motivations to Appraisal Techniques." THE APPRAISAL JOURNAL 41 (October 1973): 464-75.

"Municipal Finance - The Duke Law Journal Symposium." DUKE LAW JOURNAL. Duke University.

Oldham, Sarah G., and Jandl, H. Ward. "Rehabilitation and the Tax Reform Act." URBAN LAND 36 (December 1977): 4-10.

OPPORTUNITIES AND CONSTRAINTS ANALYSIS OF RESIDENTIAL DEVELOPMENT. San Francisco: Gruen Gruen & Associates, 1979.

Perkins, Bradford. "Why Real Estate Feasibility Analyses Have Not Worked." REAL ESTATE REVIEW (n.d.): 33-37.

Rams, Edwin M. "Markets, Risk, Feasibility and Real Estate Ventures." THE REAL ESTATE APPRAISER 40 (May-June 1974): 29-32.

Ratcliff, Richard U. "Appraisal: Is It Measurement or Prediction?" THE REAL ESTATE APPRAISER 38 (November-December 1972): 4-6.

Ratcliff, Richard U. "Capitalized Income Is Not Market Value." THE APPRAISAL JOURNAL 36 (January 1968): 38-40.

_____. "Don't Underrate the Gross Rent Multiplier." THE APPRAISAL JOURNAL 39 (April 1971): 264-71.

_____. "A Restatement of Appraisal Theory." WISCONSIN COMMERCE REPORTS, Vol.7 (1963).

Ratcliff, Richard U., and Schwab, Bernhard. "Contemporary Decision Theory and Real Estate Investment." THE APPRAISAL JOURNAL 38 (April 1970): 165-87.

Ratcliff, Richard U., and Swan, Dennis G. "Getting More From Comparables by Rating and Regression." THE APPRAISAL JOURNAL 40 (January 1972): 68-75.

Roddewig, Richard J., and Young, Michael. "Neighborhood Revitalization and the Historic Preservation Incentives of the Tax Reform Act of 1976: Lessons from the Bottom Line of a Chicago Red Brick Three Flat." Chicago: Schlawes & Company, 1977. (Mimeographed.)

Seymour, Charles F. "More and More of My Reports Are Valueless." THE APPRAISAL JOURNAL 35 (October 1967): 453-63.

SHOPPING CENTER CHECKLIST: PROPERTY ACQUISITION CHECKLIST. New York: International Council of Shopping Centers, 1973.

SHOPPING CENTER CHECKLIST: SITE PREPARATION CHECKLIST. New York: International Council of Shopping Centers, 1971.

Smith, H.C., and Ractor, R.L. "Should the Traditional Appraisal Process be Re-Structured?" THE REAL ESTATE APPRAISER 36 (November-December 1970): 6-11.

Sonstelie, Jon C., and Portney, Paul R. "Profit Maximizing Communities and the Theory of Local Public Expenditures." JOURNAL OF URBAN ECONOMICS, Vol.5, No.2 (April 1978).

Tischler, Paul "The Importance of the Highest and Best Use Analysis." THE REAL ESTATE APPRAISER 40 (May-June 1972): 35-36.

Urban Land Institute. OPTIMIZING DEVELOPMENT PROFITS IN LARGE SCALE REAL ESTATE PROJECTS. Technical Bulletin No. 67. Washington, D.C.: Urban Land Institute, 1972.

_____. REAL ESTATE FINANCIAL REPORTING. Washington, D.C.: Urban Land Institute, 1972.

WASTEWATER SOLIDS MARKETING AND IMPLEMENTATION STUDY. San Francisco: Gruen Gruen & Associates, 1979.

Wendt, Paul. "Highest and Best Use: Fact or Fancy." THE APPRAISAL JOURNAL 40 (April 1972): 165-74.

_____. "Recent Developments in Appraisal Theory." THE APPRAISAL JOURNAL 37 (October 1969): 485-500.

S E M I N A R

R E A L E S T A T E F E A S I B I L I T Y

A N A L Y S I S

Presented By:

Professor James A. Graaskamp, CRE, SREA
University of Wisconsin, School of Business

For

Denver Chapter
American Institute of Real Estate Appraisers

September 16-17, 1983

REAL ESTATE FEASIBILITY SEMINAR

Second Day

Presented By:
Professor James A. Graaskamp, CRE, SREA
University of Wisconsin, School of Business

I. Although macroeconomic theory argues a tendency toward perfect competition, the individual project should be striving toward a monopoly. Market analysis is the research necessary to create and maintain a competitive edge in order to stabilize investment performance against the profit decline of perfect competition, against inadvertent clash with community attitudes, and against future user rejection.

A. Given that premise, market research is risk management. The levels of market research would be:

1. Intuitive positioning to reflect attitudes about the future long-term trends of society, demographics, the economy, etc.
   a. For example, if government, education, and high tech are attitudes, then positioning might lead one to focus on state capitols with universities having technical rather than liberal arts emphasis.
   b. Attitudes might be set by futuristic books such as Megatrends, Third Wave, or The Ten Countries of North America.
   c. An old precept is "sell if everybody's buying, market to the gap that everyone overlooks." Thus market positioning might take an established idea in first and second tier cities and introduce it in the third and fourth tier cities.

2. Next marketing would stratify within a narrow band of a broader demographic market of intuitive positioning.

3. Stratification would consist of several segments of the broader band of preference (elderly breakdown or thirteen housing segments).

4. Identifying issues and symbols which would trigger adverse reactions of the collective consumer.

5. Evaluating demand/supply relationships to determine need for sensitivity to specialized consumer needs.

6. Focusing the project to provide relief from anxiety, a reduction in physical discomfort, improved efficiency of an activity house, or improvement of self-esteem of the targeted user/customer group.

7. Defining and controlling the window for presentation of the concept (the approach zone, the sales center office, the formal introduction and interview, etc.).

8. Identifying alternative markets and basic product features necessary to permit marketing campaign for an alternative second course, a fallback position.

B. The real estate project marketing program must keep in mind the features required to neutralize the collective consumer who might oppose entitlements, the features and codes which will motivate the space consumer at a price which provides financial viability, and the overall six strategic attributes to be marketed to the investor At the very least market and merchandising research should be able to eventually produce a marketing program which suggests:

1. Where the developer/investor should position his effort relative to demographic and economic trends given a desired scale of operation.

2. The unmet needs in the marketplace in terms of mostprobable user groups, their total number, and their effective demand constraints.

3. The time span of their effective demand in the marketplace

4. The competitive standard product minimum required for entry into the market.

5. The competitive product/service/margin necessary for monopoly advantage

6. The project image most likely to neutralize collective opposition

7. Essential media and themes required for promotion programs

8. Financial parameters required to attract investors, mortgage or equity

II. The first step is to reduce aggregate data about user groups which is plausible but overly general information to a scale which will focus on a sub-segment with a proper rationale or hierarchy. To do that requires an analytical model and in most cases, each situation requires the analyst to create his own model with which to structure the data available and to discover the missing links in the logic diagram which must be researched.

A. Models organize the anlyst, the report, and the client

1. Models explain what you are going to do.

2. Models make relationships and key assumptions explicit.

3. Models permit clients to understand logic of conclusion and to test his own set of assumptions.

B. A market research model should be careful to recognize?

1. What are the questions

2. What data is available which is relevant?

3. What theory is available to focus data on the questions?

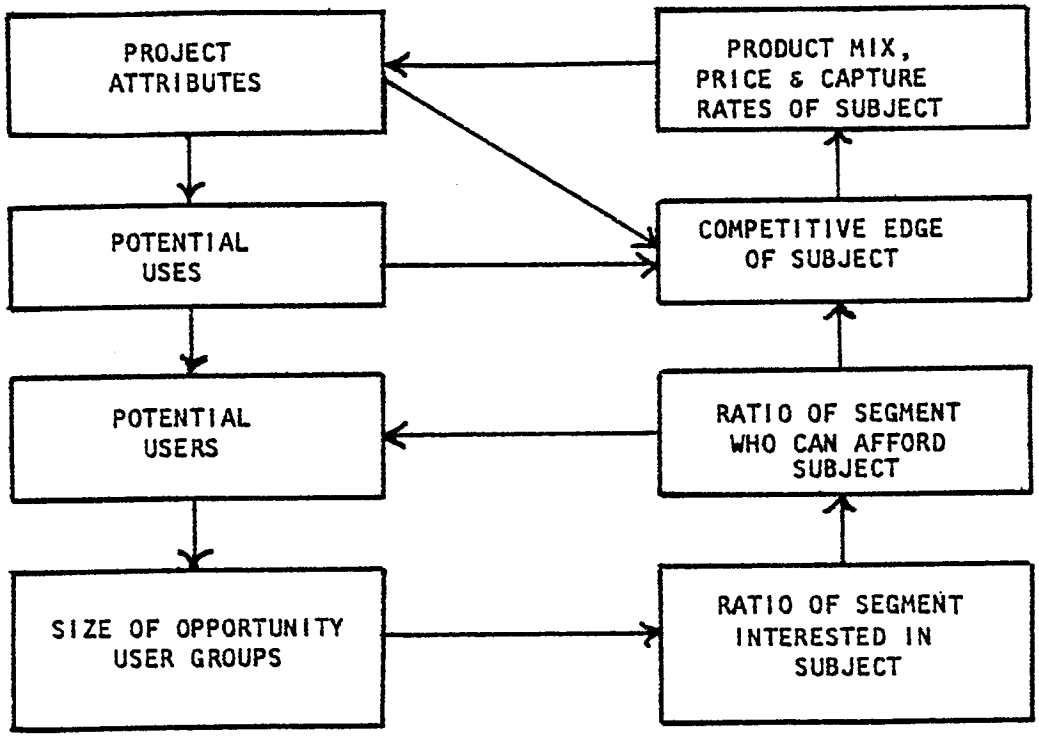
4. How will the results be communicated?

5. What are the abilities of the analyst?

6. What is the cost benefit ratio between the model method and the question?

EXHIBIT I

SEGMENTATION LOGIC TREE



C. Market data refers to aggregate data, secondary information, the easy to acquire data from census tracts, traffic counts, building permits, and so on. It is useful to scale the size of the market potential, of the opportunity area but by itself aggregate market data is relatively unimportant to the success of most projects.

D. Merchandising data is generally primary information generated by the analyst about specific competitive projects and specific user groups which will permit an estimate of what percentage of the opportunity group can be captured for a specific project.

1. Absorption rates apply to aggregate market data to determine the total size or amount of market activity in terms of how many lots were sold, how many apartments in a rental range were newly rented, or how many square feet of leased office space were occupied.

2. Capture rates are the product of merchandise research and are the ratio of the total opportunity potential which might be secured for a project or must be secured to achieve financial goals. The capture rate will reflect a careful judgment of product mix, amenities, pricing, and timing.

E. A flow chart of the market research process is provided in Exhibit 1.

F. Most multi-tenant or multi-user land uses are susceptible to a retail trade area model. A retail model is a device analogous to establishing a retail trade area perimeter for a super market to segregate households which have a reasonable probability of using the outlet from those who don't because of convenience, distance, age, or income. Thus the analyst should establish a preliminary hypothesis for:

1. Primary market area to be served.

2. Secondary market area to be served.

3. Principal competitors.

G. Consider Exhibit 2 as a simple market model to define the size of an opportunity area in a selected county for elderly persons requiring residential care units.

1. For lines with asterisks the key ratios for reduction were derived from a survey of the elderly generating primary data for this county.

2. For example, while 37% of the elderly were financially qualified, only about 60% of those were interested in considering a residential, minimal care facility or 22% of those in the convential housing market - hence the reduction from 19,700 to only 4,200. This chart should have showed the ratios from the survey.

3. Failure to convert serious interest into action was a round number based on experience of those which had marketed similar developments in the past, as was an allowance for potential customers coming from outside the county to be closer to relatives, etc.

III. Market data provides a measure of potential scale of a market opportunity; the most important aspect of market analysis is forecasting the degree of market penetration or capture rate of remedial development.

A. To reduce aggregate market data to a merchandising hypothesis, the first clue to segmentation may be found in correctly understanding the essence of buyer motivation or of the activity to be housed.

EXHIBIT 2

FOCUSING IN ON THE VARIOUS SEGMENTS OF THE ELDERLY POPULATION

TO DETERMINE RELATIVE LEVELS OF HOUSING NEED

AND THE URGENCY OF THAT NEED

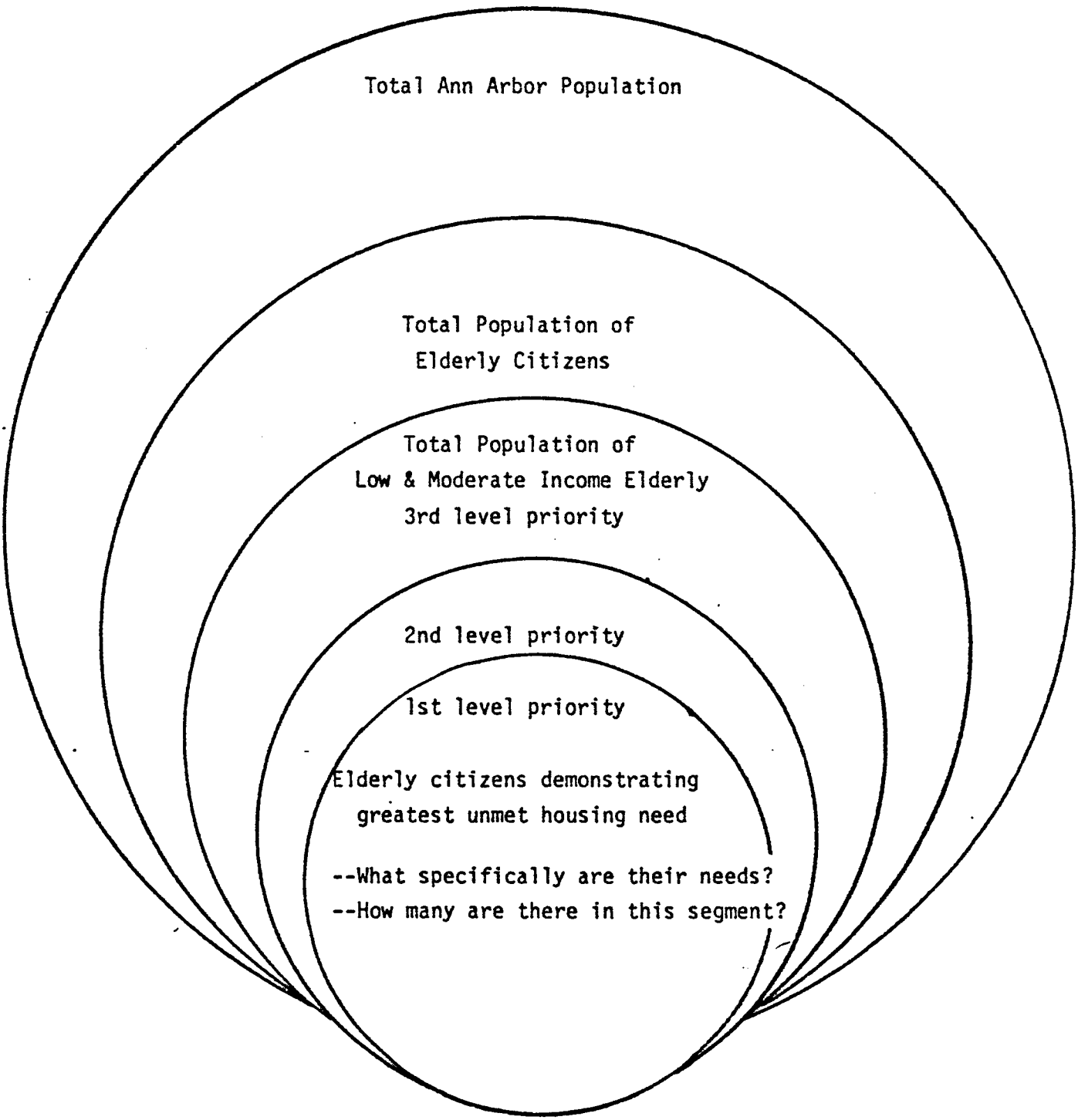


EXHIBIT 3
DEMAND FOR ELDERLY RESIDENTIAL CARE UNITS

Persons in County age 65 and over in 1970		21,914
Adjustment 1970-1974 to reflect the number of persons moving into the 65+ bracket and the application of mortality rates by age and sex		245
Estimated persons in County age 65 and over in 1974		22,159
Less persons 65+ presently in nursing and residential care facilities in County	1,792	
Less persons 65+ presently in government subsidized housing for the elderly	638	
		2,430
Persons age 65+ in the conventional housing market in County in 1974		19,729
Survey percentage of persons financially qualified for $350 a month + $5,000 entry deposit (34%)		6,707
Survey percentage of these qualified who are seriously interested in proposed independent elderly unit (63.6%)		4,270
Household equivalent (+ 1.519 persons per household)		2,811
Less estimated number who will not convert serious interest into any form of action (50%)		1,406
Less the percentage who, while seriously interested, said (before they heard the hypothesis) that their next home would probably be outside County (13.3%) from survey questionnaire)	187	
Less those disqualified because their current health status necessitates care beyond the scope of services to be provided in the residential care units (5.4%) (from survey)	76	
		263
Elderly households in County qualified for and seriously interested in moving into the proposed development		1,142
Plus an allowance for those elderly households coming from outside County to enter the proposed development(10%)		127
Elderly households qualified for and seriously interested in moving into the proposed development		1,269
Share of market opportunity area who state in survey that for their next dwelling unit their first preference would be an apartment, in a highrise, midrise, or garden building:		
Highrise or midrise 28.0%		
Garden 49.1		
77.1%		978
Less estimated numbers of households who might move into competitive developments available supply of units		270
Households that can be considered candidates for the proposed development		780

1. Retailing is a break point for goods (a warehouse grocery), or a service industry, or a theater using lighting, staging, and mood to reinforce a role played by the buyer.

2. A restaurant may be to provide a quick food break (high turnover, pedestrian flow, conditioned ordering), or to provide recreational entertainment and consumption of an evening, or to provide a staging for business, social, or publicity roles.

3. A motel for transients, for resorts, or for terminal traffic uses all of its facilities and location to sell a "room-night" of occupancy because that is an 80% gross margin. Anything done after that is justified by its contribution to "room-night" sales or its reduction of average cost to capture a customer per "room-night."

4. The revenue unit may be related to the method of measuring profit of the project in question such as per acre, per camper pad, per event, per front foot of shoreline, per stool or table, etc., not to mention sq. ft., per frame at a bowling alley or per tennis court hours, or per hour of ice time.

5. Sometimes the prospect is identified by who really signs the check for a particular type of real estate.

   a. The salesman or the management paying his travel costs
   b. The doctor or the clinic
   c. The district manager or the corporate real estate manager
   d. The ticket buyer or the promoter
   e. The bowling league, team business manager, travel agency tour guide

6. The market segment may be defined initially by the source for a prospective user list - people who share a common address, hobby, professional specialty or some other identifier.

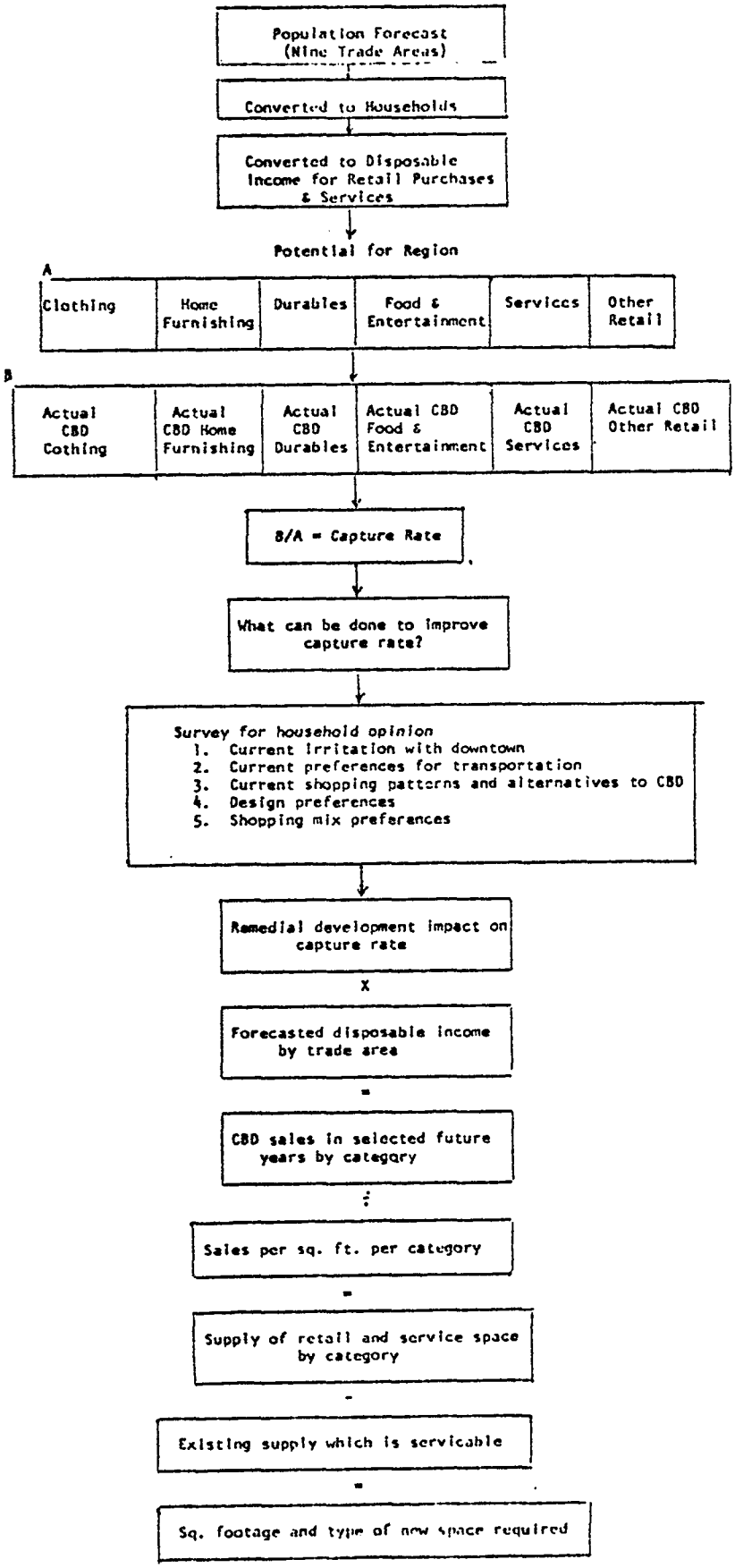
   a. A reverse directory or criss-cross telephone book
   b. Building directories of comparables
   c. Mailing lists of specialty publications
   d. License number spotting
   e. Guest registers
   f. Charge account mailing addresses

B. The objective of these approaches, revenue unit, the decision maker, the prospect list source, is to segment the user market to a specific and relatively small group of potential customers who can be surveyed to generate original and relevant information about their space needs and motivations. Unlike most consumer markets, the number of prospects is always low; think small!

   1. Real estate is a series of micro-markets. A 24-unit building with one, two, three bedroom units has at least three sub-markets.

   2. A 24-unit building is a $500,000 enterprise with a $75,000 gross sales potential from only 24 customers!

EXHIBIT 4


Population Forecast (Nine Trade Areas)
Converted to Households
Converted to Disposable Income for Retail Purchases & Services
Potential for Region
A
Clothing
Home Furnishing
Durables
Food & Entertainment
Services
Other Retail
B
Actual CBD Cothing
Actual CBD Home Furnishing
Actual CBD Durables
Actual CBD Food & Entertainment
Actual CBD Services
Actual CBD Other Retail
B/A = Capture Rate
What can be done to improve capture rate?
Survey for household opinion
1. Current irritation with downtown
2. Current preferences for transportation
3. Current shopping patterns and alternatives to CBD
4. Design preferences
5. Shopping mix preferances
Remedial development impact on capture rate
X
Forecasted disposable income by trade area
=
CBD sales in selected future years by category
Sales per sq. ft. per category
=
Supply of retail and service space by category
-
Existing supply which is servicable
=
Sq. footage and type of new space required

C. A survey of existing properties and alternatives available to a selected market segment defines only the competitive standard - namely the minimum product and price necessary to be in the market.

1. Comparison shopping further identifies where there may be gaps in the supply of alternatives, a market opportunity gap, or where the oversupply is so significant as to portend the last competitive alternative before bankrupcy - namely price cutting.

2. Comparison shopping should not only identify the physical characteristics of the product and price but the nature of the promotion effort as well.

3. Promotion comparison should consider pedestrian and vehicle approaches, model location, furnishings, and sales people.

4. Review of the promotion campaign should reveal whom the competitors believe to be their prospect.

D. A survey of users, is designed to reveal or to identify the competitive differential attributes which would provide that monopoly element required of every successful project.

1. A second product of consumer survey is the ability to develop locally relevant ratios which permit disaggregation of market data into market segments and the conversion of potential numbers of people into potential dollar sales over time.

2. Survey questions to create ratios require previous construction of a market model hypothesis.

3. Survey questions can discover latent political issues or provide a calm base for citizen input from those who rightfully dislike public hearings.

4. Survey questions and execution should not be done by planners or appraisers.

IV. A good example of modeling market data through segmentation and survey for renovation in a small community is a project by Gruen Gruen + Associates for Santa Maria, California. The study was begun in 1972. Project is operating as the Santa Maria Town Center with retail sales ahead of forecasts.

A. The Gruen's were able to convince the redevelopment agency to avoid any physical planning until a detailed analysis of the demand for alternative services that could attract people back to the downtown area was done. This EMAS study (economic market analysis study) outline is in Exhibit 3 had the following outputs:

1. First, a full analysis of economic data and retail data was utilized to generate information about the type of tenancies that could realistically be expected to penetrate downtown markets. (Table of Contents Exhibit 4)

EXHIBIT 5

POTENTIAL MARKET SEGMENTS

I. Singles — Unmarried, active, mobile, many interests, entertain informally, few financial burdens, recreation oriented. Buy basic furniture, basic kitchen equipment, cars, stereos, and vacations.

II. Young Marrieds, #1 — Young couple, working wife, entertain informally, amateur gardeners, planning on family. Better off financially than they will be in the "family formation" future. Buy durables — cars, kitchen equipment, furniture, and vacations. Rate housing as a need for more living space.

III. Young Marrieds, #2 — Discretionary income available, deferring family, active, entertain informally and often, some formal entertaining, independent, dual-person working household, do-it-yourself buffs, sports car. Rate housing as an investment.

IV. Compact Family/Move Down — Discretionary income available, interested in no maintenance, informal living, some formal entertainment. Away from home often, occasional visits from family or guests, focus on both active and passive recreation.

V. Divorcees/With Children — Family oriented activity, limited entertainment, informal lifestyle, limited maintenance.

VI. Full Nest, #1 — Home purchasing at its peak, even though liquid assets are low. Dissatisfied with financial position, and amount of money saved. Conscious of monthly payments, family activities. Unemployed female with numerous interests, mostly child oriented. Lifestyle is casual and informal. Interested in new products, buy washers, dryers, T.V.'s, baby food, dolls, wagons, etc.

VII. Full Nest, #2 — Family move-up market, as financial position gets better, some wives work. Interested in larger sized packages. The most price/size sensitive group.

VIII. Established Family — Making monthly payment comfortably, some discretionary income as more wives work, approaching peak of economic and social lifestyle curve, some formal entertaining, older children and teenagers, many interests.

IX. Luxury Families — Have arrived, tremendous discretionary income, very formal house, don't entertain often, but when they do, it's formal, dine out often, no maintenance, privacy mandatory.

X. Empty Nester - Home ownership at its peak, more satisfied with financial position. Small or no debt. Family is often away from home, occasional visits from family. Mobile in attitude, but permanent in residence, near grandchildren, many hobbies, one child in college, one or two children married, self-sufficient couple.

XI. Active Retired — Still working two or three days per week, active either socially or politically in community or church affairs, self-sufficient, many hours away from home, do not entertain often, but when they do, it's semi-formal. Winter/summer residences. Likely to sell home before retirement.

XII. Retired — Drastic cut in income, dependent, limited activities outside community. Winter/summer residences.

D. Consider the elderly housing market chart in Exhibit 2a,b. Notice that the ratios required for market segmentation follow a logical reduction pattern. The analyst has made several working assumptions - namely that his market is over 65 and overwhelmingly from Dane County because these assumptions are both reasonable and conform to break-out points in the raw data.

E. The ratio sought by the survey follow a precise reduction pattern:

1. How many will consider moving?
2. Of those, how many would consider staying in town?
3. Of those, how many would consider an apartment?
4. Of those remaining who would consider an apartment in town, how many would consider a specific location?
5. Notice the reduction process defines a subset of the elderly market - a micro-market.

F. Each of these ratios suggests a specific calculation or perhaps a short table of statistics. The specific title on the table of data and its sub-columns should be written before the questions are drafted and the collection of data begun. Notice the research begins with careful definition of the questions to be answered. All answers become relevant and all unnecessary questions are avoided. These types of questions depend on knowing the precise character of secondary data available to which the ratios must be applied in the systematic model devised for the problem.

1. Confine vocabulary to basic 1000 words; avoid lingo.

2. Structure questions to permit check-off, or branching to set up subsets. (See Exhibit 6)

3. Always test the quesionnaire on half a dozen prospects or friends to reveal misunderstandings before using on the market.

4. Questions may take different formats. (See Exhibit 6)

G. The second type of question is generally attempting to measure either anxieties or preferences. Both are dangerous survey areas for amateurs as well as professionals and it is often cheaper to subcontract these particular functions to consumer research specialists. Nevertheless, a little common sense can generate considerable useful information on the competitive edge.

1. Probe for dissatisfaction with existing space or life style.
2. Probe for anxieties about uncontrollable trends and events.
3. Probe for desired social structure ties, real or imagined.

H. The real estate analyst can choose between systematic telephone interviews, direct mail questionnaires, and personal interviews in depth.

1. The telephone interview may be less expensive per question and fastest but is limited in the type and amount of questions which can be asked. Rifled to a project known to the analyst,

it tells much about the user profile for a good comparable without having to ask about the product which the analyst can inspect for himself. (See Exhibit 7)

2. A telephone survey is also useful to disaggregate census data or to estimate market penetration of a competitor (such as a retail store) into an area.

3. Direct mail questionnaires may cost from 5¢ to $3 or more for each successful question; they take at least a week to prepare and test and perhaps three weeks before cutoff of additional responses. The type of question is broader and can be graphic such as alternative site maps and simple floor plans; response depends on careful construction of the mailing list, a very time consuming process. Consider the following types of questions:

4. The double barreled question occurs when two or more questions are combined in one so that the answer is always ambiguous as to the significance of each item but often occurs in the effort to shorten an interview or a question.

   . Would you be at all uneasy if people of a different religion or race were to move in next to your home?

   . As you see it, what are some of the good points and the bad points of the present Governor of this state?

5. Sensitive questions on family income should be asked at the end of the interview while the opening questions should be of more general interest. When a question about income is asked, the response should permit some degree of obliqueness by the respondent.

   . The respondent can select a range of income or perhaps enter the answer with a letter A, B, etc. in place of a dollar amount.

   . If socio-economic questions are generally short and direct, they are a welcome contrast to the time consuming and thought provoking questions which preceded them.

6. Contingency questions are those which are asked or skipped depending on the respondent's answer to a preceding question. The survey should be as simple to follow as a well designed road map for an interviewer or a respondent. For example:

V. Introduction to Prospect Survey

While a survey analysis appears to be a group of questions, in fact the real product is a table of data unavailable from any other source. The analyst should begin with a written mock-up of the final report logic and the specific tables which lead to a conclusion.

A. A survey of existing properties and alternatives available to a selected market segment defines only the competitive standard - namely the minimum product and price necessary to be in the market.

1. Comparison shopping further identifies where there may be gaps in the supply of alternatives, a market opportunity gap, or where the oversupply is so significant as to portend the last competitive alternative before bankruptcy - namely price cutting.

2. Comparison shopping should not only identify the physical characteristics of the product and price but the nature of the promotion effort as well.

3. Promotion comparison should consider pedestrian and vehicle approaches, model location, furnishings, and sales people.

4. Review of the promotion campaign should reveal whom the competitors believe to be their prospect.

B. A survey of users, is designed to reveal or to identify the competitive differential attributes which whould provide that monopoly element required of every successful project.

1. A second product of consumer survey is the ability to develop locally relevant ratios which permit disaggregation of market data into market segments and the conversion of potential numbers of people into potential dollar sales over time.

2. Survey questions to create ratios require previous construction of a market model hypothesis.

C. With a preliminary hypothesis as to the prospect, survey questions may be inteded to provide:

1. Key ratios necessary for segmentation of market data already broken down by trade area, demographics, employment, etc.

2. Key indicators of anxieties or preferences or tradeoffs of the prospect.

3. Key indicators of the anxieties or preferences of non-prospects who feel a vested interest in the impact or have a significant part in the purchase process. (For example - the members of the Public Housing Authority have a different set of needs than the ultimate user, but the product is "bought" by the Board).

Simple Survey Formats for Classification of Subsets & Measurement of Preference

I'd like to ask you a few questions about the place you lived just before you moved into this apartment.

5. About how many years did you live in your former home?

__ less than 1 year
__ 1 year - L.T. 2 years
__ 2 to L.T. 5 years
__ 5 to L.T. 10 years
__ 10 to 15 years
__ more than 15 years, _____

6. Did you live in a house or in an apartment building just before your move here?

__ house
__ apartment
__ other, _____

→ About how many apartments, including yours were there in the building?

__ L.T. 4
__ 4 to 8
__ 9 to 16
__ 17 to 24
__ 24 to 32
__ more than 32

About how much rent did you pay per month, including utilities but not telephone? $_____

__ L.T. $50
__ $50 to L.T. $75
__ $75 to L.T. $100
__ $100 to L.T. $125
__ $125 to $150
__ more than $150

Did you own or rent the house?

__ own
__ rent

Did you rent a room, a flat or floor, or entire house?

__ room __ flat/floor __ entire

About how much rent did you pay per month, including utilities but not telephone? $_____

__ L.T. $50
__ $50 to L.T. $75
__ $75 to L.T. $100
__ $100 to L.T. $125
__ $125 to $150
__ more than $150

Now I'd like to ask you some general questions about your decision to move to this apartment.

7. How did you first find out about them?

__ family
__ friends
__ church
__ Housing Authority
__ newspaper
__ radio
__ television
__ other, _____

26. How important are the following items to you?

	Very Important	Somewhat Important	Indifferent	Somewhat Unimportant	Not Important
Private Balconies or patios	( )	( )	( )	( )	( )
Laundry facilities in each building	( )	( )	( )	( )	( )
Washer/dryer connection in your apartment	( )	( )	( )	( )	( )
Extra storage space	( )	( )	( )	( )	( )
More than 1 bath	( )	( )	( )	( )	( )
Carpeted stairways & hallways in common areas of apt. bldg. (Areas shared by all residents)	( )	( )	( )	( )	( )
Master T.V. Antenna System	( )	( )	( )	( )	( )
Children's day care center and/or nursery school nearby	( )	( )	( )	( )	( )

14. What type of building features would you prefer in the layout of the condominium unit? (choose only one of each of the following sets of alternatives)

( ) Two bedrooms with larger living area or/
( ) Three bedrooms

( ) Three bedrooms, or/
( ) Four bedrooms, or/
( ) Large master bedroom and two 4-bed bunk rooms

( ) Two-story living room with inside balcony, or/
( ) Living room with beamed cathedral ceiling

( ) Full dining room, or
( ) Dining "L" plus family-sized kitchen

( ) Sundeck balcony for living room or/
( ) Outdoor patio at ground level

( ) Walk-in closets in each room or/
( ) Large work room plus laundry room in each unit & standard closets

( ) One car garage attached to unit or/
( ) Two car garage in group parking complex, or/
( ) Carport and lower price

( ) Central air conditioning or/
( ) Woodburning masonry fireplace or/
( ) Gas-log fireplace and window air conditioning unit

( ) Contemporary natural decor with wood and rock materials, or/
( ) Maintenance-free modern masonry and aluminum exteriors, or/
( ) Well styled colonial detailing

( ) Extensive outside landscaping, or/
( ) More floor space in each room

E. Generalized Format of Merchandising Report Summary

Cash flows ultimately depend on sales or rental revenues and further refinements of the frontdoor-backdoor approaches depend on establishing an explicit set of assumptions about the geographical market area, the user segment within that market area, and so on. All you buy in a real estate investment is a set of assumptions about the market. Therefore, the analyst should provide and identify a marketing assumption checklist for the reader:

1. Definition of geographic and demographic market.

   a. Primary trade area to be served

   b. Profile of prospects by current location, statue, income, etc. in primary carefully segmented area.

   c. Secondary trade area to be served

   d. Profile of prospects by current location, status, income, etc. in secondary carefully segmented area.

2. Definition of principal competitors

   a. Existing supply

   b. Prospective supply with timeline advantage.

   c. Competitive standard package of project features.

   d. Unique features of successful competitors.

   e. Probable cause of unsuccessful competitors.

   f. Merchandising appeals of competitors.

   g. Definition of market penetration and competitive gap.

3. Establishment of merchandising strategy logic

   a. Competition
      - Standard product
      - Price and quality
      - Competitive edge opportunity

   b. Positioning strategy
      - Sales themes
      - Name and byline
      - Site and unit features
      - Strong sales points

   c. Construction and architecture
      - Sales area
      - Models
      - Entrance and signs

DENVER RETIREMENT HOUSING SURVEY

1. Please indicate which of the following best describes your **present** residence?
   - (1) ☐ Single Family House
   - (2) ☐ Apartment (without elevator)
   - (3) ☐ Apartment (with elevator)
   - (4) ☐ Townhouse
   - (5) ☐ Duplex, Three-family or Four-plex
   - (6) ☐ Senior Citizens Housing
   - (7) ☐ Retirement Center (with meals and supporting services)
   - (8) ☐ Other, please specify _____

2. Approximately how many years have you resided within your present residence?

   _____ years

3. Please indicate which best describes the financial arrangement of your **present** residence:
   - (1) ☐ We/I own it
   - (2) ☐ We/I rent it
   - (3) ☐ Other, please specify _____

4. If you own your own home, what is its current market value?
   - (1) ☐ Less than $60,000
   - (2) ☐ $60,000 or higher
   - (3) ☐ Do not know

5. Please indicate (check one) which of the following best describes with whom you share your present residence:
   - (1) ☐ I live alone
   - (2) ☐ I share it with my spouse only.
   - (3) ☐ I share it with my children only.
   - (4) ☐ I share it with my spouse and children.
   - (5) ☐ I share it with a friend or friends.
   - (6) ☐ I share it with relatives other than spouse and children.
   - (7) ☐ Other (please specify) _____

6. Please indicate the zip code of your present residence:

   Zip Code _____

RETIREMENT COMMUNITY CONCEPT

In recent years, many retired persons have found the convenience of retirement living as an attractive alternative to living in a single family house. The reason frequently mentioned for moving are the freedom from the burden of home upkeep and the opportunity to live in a community of persons with similar interests. Each retirement center resident has the privacy of her/his own apartment and the opportunity to meet with friends for meals in the central dining room and join in recreational activities. Provisions are available for health check-ups and outpatient health care if and when needs arise.

7. Are you familiar with this retirement community concept?

   (1) ☐ Yes, because I/we have visited family/friends who live in a retirement community.

   (2) ☐ Yes, because I/we have considered living in a retirement community.

   (3) ☐ I/we know very little about it.

8. If the concept of retirement apartments with central dining and a senior health center is an attractive alternative to your present housing, when might you find it desirable?

   (1) ☐ I would be glad to move into such a community **now**, provided its accommodations were suitable to my needs.

   (2) ☐ I might find it quite desirable **in a couple of years.**

   (3) ☐ I am not interested now, but would like to see such an option open to me if I should find that I want it later.

   (4) ☐ Unsure.

   (5) ☐ I would definitely never be interested in such a community.

PROPOSED DENVER RETIREMENT COMMUNITY

9. The proposed retirement community will be located in the Sloan's Lake area of Denver. Please indicate what you feel are the advantages and disadvantages of this location. See map showing location of Sloan's Lake.

Advantages

(1) _____

(2) _____

(3) _____

Disadvantages

(1) _____

(2) _____

(3) _____

☐ Not familiar with Sloan's Lake location.

The proposed retirement community plan includes an outpatient health center and pharmacy located on the same site.

10. Do you feel the presence of the outpatient health center would influence your decision to live in the proposed retirement community?

(1) ☐ Yes, I/we feel the availability of the health center is a **definite advantage.**

(2) ☐ Yes, I/we feel the availability of the health center is a **slight advantage.**

(3) ☐ No, I/we feel the availability of the health center is not an advantage because I/we prefer other health care alternatives.

HOUSING FEATURES

11. What type of residence would you prefer for your **next** move? (Check one)

    (1) ☐ I/we would prefer it to be an apartment (without elevator).

    (2) ☐ I/we would prefer it to be an apartment (with elevator).

    (3) ☐ I/we would prefer it to be a duplex, three-family or four-plex.

    (4) ☐ I/we would prefer it to be some sort of **small** single family dwelling such as a cottage.

    (5) ☐ I/we are not sure.

    (6) ☐ Other, please specify _____

12. What building height would you prefer?

    (1) ☐ A one-story building.

    (2) ☐ A multiple story building with elevator.

    (3) ☐ The building height makes no difference.

    (4) Comments _____

13. What type of unit style would you prefer? (Check one)

    (1) ☐ Efficiency apartment with private bath.

    (2) ☐ One bedroom, living room and bath.

    (3) ☐ One bedroom, living room, den or study and **one bath.**

    (4) ☐ Two bedrooms, living room and **one bath.**

    (5) ☐ Two bedrooms, living room and **one and a half baths.**

    (6) ☐ Two bedrooms, living room and **two baths.**

14. What type of kitchen facilities would you prefer in your residence? (Check one)

    (1) ☐ Would prefer not to have any kitchen facilities since I would expect to eat all meals in a central dining room with friends.

    (2) ☐ Would like to have a **kitchenette** in my unit for preparing occasional snacks.

    (3) ☐ Would prefer to have a **full kitchen** in my unit although I may eat some meals in a central dining room with friends.

15. What type of meal service would you prefer?

    (1) ☐ Prepare **all** your own meals in your own kitchen.

    (2) ☐ Prepare one or two meals a day in your own kitchen.

    (3) ☐ Prepare less than one meal a day in your own kitchen.

16. Preference for retirement community amenities.

Please indicate the relative importance of the following amenities in making your next housing change.

	Very Important	Somewhat Important	Not Very Important	Not at all Important
(1) Close proximity to outpatient health center	☐	☐	☐	☐
(2) Exercise program	☐	☐	☐	☐
(3) Central dining room	☐	☐	☐	☐
(4) Linen service	☐	☐	☐	☐
(5) Maid service	☐	☐	☐	☐
(6) Group shuttle bus to shopping centers, restaurants and selected facilities	☐	☐	☐	☐
(7) Beauty salon/Barber shop	☐	☐	☐	☐
(8) Guest apartment facilities	☐	☐	☐	☐
(9) Pharmacy	☐	☐	☐	☐
(10) 24 hour security with emergency call buttons	☐	☐	☐	☐
(11) Outdoor patios, and/or balconies	☐	☐	☐	☐
(12) Whirlpool/hot tub	☐	☐	☐	☐
(13) Craft/hobby rooms	☐	☐	☐	☐
(14) Library	☐	☐	☐	☐
(15) Organized recreation program	☐	☐	☐	☐
(16) Chapel	☐	☐	☐	☐
(17) Covered parking	☐	☐	☐	☐
(18) Ability to keep small pet	☐	☐	☐	☐
(19) Other, please specify _____				

17. In the previous list of 18 items, what are the 3 **most important** features to you?

List the numbers here: (1) _____ (2) _____ (3) _____

18. In the previous list of 18 items, what are the 3 **least important** features to you?

List the numbers here: (1) _____ (2) _____ (3) _____

FINANCIAL ARRANGEMENTS

The payment plan being considered requires an initial payment along with monthly fees. Generally with a higher initial payment a lower monthly payment is possible. The monthly fee includes the enjoyment of an apartment, the cost of optional meals in the dining room, scheduled transportation, utilities and services plus the use of community and recreation facilities. In other words except for the cost of meals prepared in your own kitchen or eating out in restaurants most of your monthly living costs are included.

19. Please indicate the highest level of initial payment **and** monthly payment you could pay.

Initial Payment (Check One)		**Monthly Payment** (Check One)	
(1) ☐	Less than $9,999	(11) ☐	Less than $399 per month
(2) ☐	$10,000-19,999	(12) ☐	$400-499
(3) ☐	20,000-29,999	(13) ☐	500-599
(4) ☐	30,000-39,999	(14) ☐	600-699
(5) ☐	40,000-49,999	(15) ☐	700-799
(6) ☐	50,000-59,999	(16) ☐	800-899
(7) ☐	60,000-69,999	(17) ☐	900-999
(8) ☐	70,000-79,999	(18) ☐	1000-1099
(9) ☐	80,000-89,999	(19) ☐	1100-1199
(10) ☐	90,000 or higher	(20) ☐	1200 or higher

With the proposed payment concept several payment plans are possible.

20. Which combination of payments would you most prefer?

(1) ☐ High initial payment low monthly fees, monthly fees increasing as costs increase.

(2) ☐ Low initial payment, high monthly fees, monthly fees increasing as costs increase.

(3) ☐ A middle level of initial payment and monthly fees, monthly fees increasing as costs increase.

(4) ☐ High initial payment, high monthly payment, monthly payment held constant.

21. Which of the following payment plans would you most prefer?

(1) ☐ Low initial payment with **no refund of payment** when you move.

(2) ☐ Middle amount of initial payment with **partial refund of initial payment** when you move.

(3) ☐ High initial payment with **complete refund upon move.**

22. If the payment plans described above do not meet your needs which of the following would you prefer:

(1) ☐ The payment concept presented above meets my needs.

(2) ☐ I/we would prefer to **rent** my/our next residence.

(3) ☐ I/we would prefer to **purchase** my/our next residence.

(4) ☐ I/we are not familiar with the various alternatives open to me/us regarding this subject.

(5) ☐ I/we are not sure.

GENERAL INFORMATION

23. Please indicate your sex: (1) ☐ Male (2) ☐ Female

24. Please indicate your marital status:

(1) ☐ Single (never married)

(2) ☐ Married

(3) ☐ Separated/Divorced

(4) ☐ Widowed

25. **Your Age:** _____ **Spouse's Age:** _____

26. At what age did you retire?

Your Retirement Age: _____ **Spouse's Retirement Age:** _____

27. If not retired, at what age do you plan to retire?

Your planned retirement age: _____

Spouse's planned retirement age: _____

28. Your occupation? _____ Spouse's occupation? _____
(If retired your/spouse's occupation prior to retirement)

HOUSEHOLD INFORMATION

29. Please indicate number of people in your household _____.

30. Please indicate total (your/spouse's) annual household income $_____.

31. How many people contribute to this income? _____ number of people.

32. Which of the following (check as many as are appropriate) is the source of your income?

(1) ☐ Full time wages/salary
(2) ☐ Part time wages/salary
(3) ☐ Social security
(4) ☐ Annuity
(5) ☐ Pension
(6) ☐ Rental property
(7) ☐ Interest
(8) ☐ Dividends

33. Do you and/or your spouse presently drive an automobile?

(1) ☐ Yes (2) ☐ No

34. If **yes**, do you own the automobile? (1) ☐ Yes (2) ☐ No

35. If **no**, what is your mode of transportation?

(1) ☐ Rely on family private car
(2) ☐ Rely on friend's private car
(3) ☐ Taxi
(4) ☐ Bus
(5) ☐ Special senior transportation
(6) ☐ Walk
(7) ☐ Other, please specify _____

THANK YOU FOR YOUR HELP!

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FEASIBILITY RESEARCH GROUP, LTD.
527 E. LIBERTY STREET, SUITE 208
ANN ARBOR, MICHIGAN 48104

- Project amenities
- Roads and paving
- Site plan
- Construction schedule

4. Definition of prospect target for subject property

   a. Recommendations on site location

   b. Recommendations on site linkages and dynamics

   c. Recommendations on building types and numbers

   d. Recommendations on basic unit features

   e. Recommendations on basic unit options

   f. Recommendations on level of quality

   g. Recommendations on basic price targets

F. Structuring the Feasibility Report

Ultimately the budget established for analysis and the need to communicate the findings represent a severe constraint on the feasibility process. Priorities and critical assumptions necessary to achieve the desired outcome must be separated from the great mass of detail and presented tersely.

1. Format of the report should rely on three elements:

   a. An executive summary which tersely identifies alternative courses of action and recommendations as to how client can make the choice.

   b. A basic reference document which includes all the detail analysis.

   c. A collection of reports by contributing professionals incorporated by reference.

2. To be terse the executive summary should depend on:

   a. Simple charts of choices of alternative outcomes (See Exhibit 21).

   b. Simple flow charts (Such as Exhibits 3,7,13,22).

   c. Specific criteria used to measure "liklihood of success"

3. Statement of limiting conditions should first begin with a definition of the word "feasible" (as per Institute of Appraisal Terminology Handbook), and then state that it was the purpose of the study to define the context of the situation and the parameters within which a solution might be

found to fit the major constraints with a reasonable likli-hood of success. It should carefully point out that the generalist has made a series of explicit assumptions which may, nevertheless, need confirmation by more detailed study best done by specialists. The statement of limiting conditions should further emphasize the constraints and objectives placed on the study by identifying who:

a. Defined the constraints

b. Defined success

c. Provided the data and assumptions

d. Permitted key assumptions to remain untested for economy or speed

e. Accepted assumptions of conditions of uncertainty

f. Assembled proforma financial statements and projections

g. Executed feasibility confirmation of key assumptions with aid of specialists.

h. Placed limitations on use and confidentiality.

Publications Indexed

ADDRESSES OF PERIODICALS

Administrative Management, Geyer-McAllister, 51 Madison Avenue, New York, NY 10010.
American Automatic Merchandiser, M-G Publications, Box 352, Northfield, IL 60093.
American Statistician, American Statistical Association, 806 15th Street N.W., Washington, DC 20005.
Americas, Secretariat, OAS, 17th and Constitution Avenues N.W., Washington, DC 20006.
Annals of Tourism Research, Department of Habitational Resources, University of Wisconsin — Stout, Menomonie, WI 54751.
Architectural Record, McGraw-Hill Publications, 1220 Avenue of the Americas, New York, NY 10020.
ASTA Travel News, Travel Communications, 488 Madison Avenue, New York, NY 10022.

The Baker's Digest, Siebel Publishing Co., 4049 West Peterson Avenue, Chicago, IL 60646.
Bakery, Rich Products Corp., Bakery & Food Service Div., PO Box 245, Buffalo, NY 14240.
Bakery Production and Marketing, Gorman Publishing Co., 3460 John Hancock Center, Chicago, IL 60611.
Barron's National Business and Financial Weekly, Dow Jones and Co., 22 Cortlandt Street, New York, NY 10007.
Beverage Industry, Magazines for Industry, 777 Third Avenue, New York, NY 10017.
Beverage World, Keller Publisher Corporation, East Stroudsburg, PA 18301.
Bon Appétit, 4700 Belleview, Kansas City, MO 64112.
The Brewer's Digest, Siebel Publishing Co., 4049 West Peterson Avenue, Chicago, IL 60646.
Briefing, American Express, 21 East 84th Street, New York, NY 10028.
Building Design and Construction, Cahners Publishing Co., 5 South Wabash Avenue, Chicago, IL 60603.
Building Operating Management, Trade Press Publishing Co., 407 East Michigan Street, Milwaukee, WI 53202.
Buildings Systems Design, Stephen C. Simonson, 476 Branch Avenue, Little Silver, NJ 07739.
Business Week, McGraw-Hill Publishing Co., 1221 Avenue of the Americas, New York, NY 10020.

Canadian Hotel and Restaurant, Maclean-Hunter Publishing Co. Ltd., 481 University Avenue, Toronto M5W 1A7, Ontario, Canada.
Canadian Institute of Food Science & Technology Journal, Canadian Institute of Food Science & Technology, Suite 10, 46 Elgin Street, Ottawa K1P 5K6, Ontario, Canada.
Catering Industry Employee, Hotel and Restaurant Employees & Bartenders International Union, 120 E. Fourth Street, Cincinnati, OH 45202.
Chain Report, Institutions/VF, 5 South Wabash Avenue, Chicago, IL 60603.
Chain Store Age Executive, Executive Offices, 425 Park Avenue, New York, NY 10022.
Chef/Institutional, Culinary Review, 441 Lexington Avenue, New York, NY 10017.
The Chuck Wagon, Texas Restaurant Association, PO Box 1429, Austin, TX 78767.
Cirascope, Chicago and Illinois Restaurant Association, 20 North Wacker Drive, Chicago, IL 60606.
Club Executive, R&W Management Co., 1028 Connecticut Avenue N.W., Washington, DC 20036.
Club Management, Commerce Publishing Co., 408 Olive Street, St. Louis, MO 63102.
Clubs in Town & Country, Harris, Kerr, Forster & Company, 420 Lexington Avenue, New York, NY 10017.
Commerce America, U.S. Department of Commerce, Superintendent of Documents, Washington, DC 20402.
The Consultant, International Society of Food Service Consultants, PO Box 689, Bloomfield Hills, MI 48013.
Consumer Reports, Consumers Union of the U.S., 256 Washington Street, Mount Vernon, NY 10550.
Consumers' Research Magazine, Consumers' Research, Washington, NJ 07882.
Continental Franchise Review, National Research Publications, PO Box 6360, Denver, CO 80206.
Contract Interiors, Billboard Publications, 1515 Broadway, New York, NY 10036.
Cooking for Profit, Gas Magazines, 1202 South Park Street, Madison, WI 53715.
The Cornell Hotel and Restaurant Administration Quarterly, School of Hotel Administration, 327 Statler Hall, Cornell University, Ithaca, NY 14853.
Critical Reviews in Food Science and Nutrition, Chemical Rubber Co., 18901 Cranwood Parkway, Cleveland, OH 44128.
The Culinarian, Chef's Association of the Pacific Coast, 995 Market Street, Suite 801–815, San Francisco, CA 94130.

Dairy and Ice Cream Field, Magazines for Industry, 777 Third Avenue, New York, NY 10017.
Dun's Review, Dun and Bradstreet Publications, 666 Fifth Avenue, New York, NY 10019.

Eastern Grape Grower & Winery News, Box 329, Watkins Glen, NY 14891.
Economic Indicators, Joint Economic Committee, Superintendent of Documents, Washington, DC 20402.
Economic Report (supplement to *NRA Washington Report*), National Restaurant Association, One IBM Plaza, Suite 2600, Chicago, IL 60611.
Electrical Apparatus with Electric Heat, Barks Publications, 400 North Michigan Avenue, Chicago, IL 60611.
Employee Relations Law Journal, 33 West 60th Street, New York, NY 10023.
Environmental Science and Technology, American Chemical Society, 1155 16th Street N.W., Washington, DC 20036.
Executive Housekeeper, North American Publishing Co., 401 North Broad Street, Philadelphia, PA 19108.

Fast Service, Harcourt Brace Jovanovich, 757 Third Avenue, New York, NY 10017.
Financial Executive, Financial Executives Institute, 633 Third Avenue, New York, NY 10017.
Florida Hotel-Motel News, PO Box 1754, Tallahassee, FL 32302.
Food and Wine, PO Box 2696, Boulder, CO 80321.
Food Engineering, Chilton Co., Chilton Way, Radnor, PA 19089.
Food Executive, International Food Service Executives Association, 508 IBM Building, Fort Wayne, IN 46815.
Food Management, Harcourt Brace Jovanovich, 757 Third Avenue, New York, NY 10017.
Food Processing, Putman Publishing Co., 430 North Michigan Avenue, Chicago, IL 60611.
Food Production/Management, Canning Trade, 2619 Maryland Avenue, Baltimore, MD 21218.
Food Science & Technology, Forster Publishing Co., Ottikerstrasse 59, 8033 Zurich, Switzerland.

Food Service/Hospitality, 85 Bloor Street E., 4th Floor, Toronto M4W 1A9, Ontario, Canada.
Food Service Marketing, Electrical Information Publications, 2132 Fordem Avenue, Madison, WI 53701.
Foodservice Equipment Dealer — see *Foodservice Equipment Specialist*
Foodservice Equipment Specialist, 5 South Wabash Avenue, Chicago, IL 60603.
Food Technology, Institute of Food Technologists, 221 North LaSalle Street, Chicago, IL 60601.
Forbes, 60 Fifth Avenue, New York, NY 10011.
Fortune, Time, 591 North Fairbanks Court, Chicago, IL 60611.
Fuel Oil and Oil Heat and Solar Systems, Industry Publications, 200 Commerce Road, Cedar Grove, NJ 07009.

Gourmet, 777 Third Avenue, New York, NY 10017.

HCIMA Journal, Hotel, Catering, and Institutional Management Association, 191 Trinity Road, London SW17 7HN, England.
HCIMA Review, Hotel, Catering, and Institutional Management Association, 191 Trinity Road, London SW17 7HN, England.
HKF Panorama, Harris, Kerr, Forster & Co., 626 Wilshire Boulevard, Los Angeles, CA 90017.
Harvard Business Review, Graduate School of Business Administration, Harvard University, Boston, MA 02163.
Health Foods Retailing, Syndicate Magazine, 6 East 43rd Street, New York, NY 10017.
Heating/Piping/Air Conditioning, Reinhold Publishing, 600 Summer Street, Stamford, CT 06904.
Holiday — see *Travel/Holiday*
Hospital Financial Management, Hospital Financial Management Association, 666 North Lake Shore Drive, Chicago, IL 60611.
Hospitality, Penton/IPC, 614 Superior Avenue West, Cleveland, OH 44113.
Hospitals, American Hospital Association, 840 North Lake Shore Drive, Chicago, IL 60611.
Hotel & Motel Management, Robert Freeman Publishing Co., 845 Chicago Avenue, Evanston, IL 60602.
Hotel Herald, Box 188, Gettysburg, PA 17325.
Hotel Restaurant, Matthaes Verlag GmbH, Olgastrasse 87, Postfach 622, 7 Stuttgart 1, West Germany.
Hotel & Restaurant, Centralfureningen Af Hotelvaerter og Restauratuerer Danmark, Vodroffsvej 46, 1900 Copenhagen, Denmark.
Hotel Sales Management Association World, Hotel Sales Management Association, 362 Fifth Avenue, Suite 1160, New York, NY 10001.
Hoteldomani, Publihotel International s.r.l., Via Bianconi, 10 — 20139 Milano, Italy.
Hotelier and Caterer, Ramsay, Son & Parker (Pty) Ltd., 405 Tulbagh Centre, Hans Strijdom Avenue, Cape Town, South Africa.

In Britain, British Tourist Authority, Head Office and Tourist Information Centre, 64 St. James Street, London SW1, England (distributed in U.S. by British Tourist Authority, 680 Fifth Avenue, New York, NY 10019).
Indian Hotelkeeper and Traveller, PO Box 110, New Delhi-1, India.
Institutional Distribution, Restaurant Business, 633 Third Avenue, New York, NY 10017.
Institutions/Volume Feeding, Cahners Publishing Co., 5 South Wabash Avenue, Chicago, IL 60603.
Insurance Conference Planner, Bayard Publications, 300 Broad Street, Stamford, CT 06901.
International Hotel Review, International Trade Publications Ltd., Queensway House, Redhill, Surrey RH1 1QS, England.
International Review of Food and Wine, 750 Third Avenue, New York, NY 10017.
Italian Wines and Spirits, PO Box 1130, Long Island City, NY 11101.

Journal of Accountancy, American Institute of Certified Public Accountants, 1211 Avenue of the Americas, New York, NY 10036.
Journal of Accounting, Auditing and Finance, Warren, Gorham & Lamont, 210 South Street, Boston, MA 02111.
Journal of Advertising Research, Advertising Research Foundation, 3 East 54th Street, New York, NY 10022.
Journal of Agricultural and Food Chemistry, American Chemical Society, 1155 16th Street N.W., Washington, DC 20036.
Journal of the American Dietetic Association, American Dietetic Association, 430 North Michigan Avenue, Chicago, IL 60611.
Journal of Environmental Health, National Environmental Health Association, 1200 Lincoln, #704, Denver, CO 80203.
Journal of Food Safety, Food & Nutrition Press, 265 Post Road West, Westport, CT 06880.
Journal of Food Science, Institute of Food Technologists, 221 North LaSalle Street, Chicago, IL 60601.
Journal of Hospitality Education, C.H.R.I.E., Human Development Building, Room 21, University Park, PA 16802.
Journal of Leisure Research, National Recreation and Park Association, 1601 North Kent Street, Arlington, VA 22209.
Journal of Marketing, American Marketing Association, 222 S. Riverside Plaza, Chicago, IL 60606.
Journal of Property Management, Institute of Real Estate Management, 430 North Michigan Avenue, Chicago, IL 60611.
Journal of Real Estate Taxation, Warren, Gorham & Lamont, 210 South Street, Boston, MA 02111.
Journal of Travel Research, Business Research Division, University of Colorado, Boulder, CO 80309.

Kitchen Planning, Harcourt Brace Jovanovich, 757 Third Avenue, New York, NY 10017.

Laventhol & Horwath Perspective, Laventhol & Horwath, 1845 Walnut Street, Philadelphia, PA 19103.
Leisure Sciences, Crane, Russak & Company, 347 Madison Avenue, New York, NY 10017.
Lodging, American Hotel & Motel Association, 888 Seventh Avenue, New York, NY 10019.
Lodging and Food Service News, Hotel Service, 131 Clarendon Street, Boston, MA 02116.
Lodging Hospitality, PO Box 5746-U, Cleveland, OH 44101.

Management Review, American Management Associations, Box 319, Saranac Lake, NY 12983.
Marketing Information Guide, 224 Seventh Street, Garden City, NY 11530.
Meetings and Conventions, Ziff-Davis Publishing Co., 1 Park Avenue, New York, NY 10016.
Microwave Energy Applications Newsletter, International Microwave Power Institute, PO Box 241, Amherst, NH 03031.
Modern Packaging, Morgan-Grampian Publishing Co., 205 East 42nd Street, New York, NY 10017.
Monthly Economic Letter, CITIBANK, 399 Park Avenue, New York, NY 10022.
Monthly Tax Report, Laventhol & Horwath, 1845 Walnut Street, Philadelphia, PA 19103.
Mortgage and Real Estate Executives Report, Warren, Gorham & Lamont, 210 South Street, Boston, MA 02111.
Motel/Motor Inn Journal, Tourist Court Journal, 306 East Adams Avenue, Temple, TX 76501.

NRA News, National Restaurant Association, One IBM Plaza, Suite 2600, Chicago, IL 60611.
NRA Washington Report, National Restaurant Association, One IBM Plaza, Suite 2600, Chicago, IL 60611.
National Food Situation, U.S. Department of Agriculture, National Economic Analysis Division, Washington, DC 20250.
National Geographic, National Geographic Society, 17th and M Streets N.W., Washington, DC 20036.
National Provisioner, 15 West Huron Street, Chicago, IL 60610.
Nation's Business, Chamber of Commerce of the United States, 1615 H Street N.W., Washington, DC 20006.
Nation's Restaurant News, Lebhar-Friedman, 425 Park Avenue, New York, NY 10022.
Néo Restauration, Société d'Edition du Libre Service, 46 Rue de Clichy, 75009 Paris, France.
New England Economic Indicators, Research Department, Federal Reserve Bank of Boston, 600 Atlantic Avenue, Boston, MA 02106.
New England Economic Review, Federal Reserve Bank of Boston, 30 Pearl Street, Boston, MA 02106.
New York's Food and Life Sciences Quarterly, Cornell University College of Agriculture and Life Sciences, Roberts Hall, Ithaca, NY 14853.
Nutrition Reviews, Harvard School of Public Health, 655 Huntington Avenue, Boston, MA 02115.

Organizational Dynamics, American Management Associations, Box 319, Saranac Lake, NY 12983.

Pacific Travel News, Pacific Area Travel Association, Western Business Publications, 274 Brannan Street, San Francisco, CA 94107.
Personnel, American Management Associations, Box 319, Saranac Lake, NY 10020.
Personnel Journal, Box 1520, Santa Monica, CA 90404.
Pesticides Monitoring Journal, Environmental Protection Agency, Superintendent of Documents, Washington, DC 20402.
Progressive Architecture, Reinhold Publishing Co., 600 Summer Street, Stamford, CT 06904.
Psychology Today, PO Box 2990, Boulder, CO 80323.

Quick Frozen Foods, Harcourt Brace Jovanovich, 757 Third Avenue, New York, NY 10017.

Real Estate Law Report, Warren, Gorham & Lamont, 210 South Street, Boston, MA 02111.
Real Estate Review, Warren, Gorham & Lamont, 210 South Street, Boston, MA 02111.
Resort Management, Box 4169, 1509 Madison Avenue, Memphis, TN 38104.
Restaurant Business, 633 Third Avenue, New York, NY 10017.
Restaurant & Hotel Management, Verlag und Anzeigenverwaltung, 6071 Gotzenhaain bei Frankfurt am Main, West Germany.
Restaurant Hospitality, 1111 Chester Avenue, Cleveland, OH 44114.
Revue du Vin de France, Société Francaise d'Edition Vinicoles, 6 Avenue du Coq, 75009 Paris, France.

Sales and Marketing Management, 633 Third Avenue, New York, NY 10017.
Service World International, Cahners Publishing Co., 5 South Wabash Avenue, Chicago, IL 60603.
Shopping Center World, 6285 Barfield Road, Atlanta, GA 30328.
Ski Area Management, Beardsley Publishing Corp., Box 242, North Salem, NY 10560.
Snack Food, Harcourt Brace Jovanovich, 757 Third Avenue, New York, NY 10017.
Statistical Reporter, Office of Management and Budget, Superintendent of Documents, Washington, DC 20402.
Successful Meetings, 633 Third Avenue, New York, NY 10017.
Supervisory Management, American Management Associations, Box 319, Saranac Lake, NY 12983.
Survey of Current Business, U.S. Department of Commerce, Superintendent of Documents, Washington, DC 20402.

Taste, Fellows of the Culinary Institute of America, Box 53, Hyde Park, NY 12538.
Tennis Industry, Industry Publishers, 915 NE 125th Street, Suite 2-C, North Miami, FL 33161.
Texas and Southwest Hotel-Motel Review, Texas Hotel and Motel Association, 8602 Crownhill Boulevard, San Antonio, TX 78209.
Tourism International History, Tourism International Press Ltd., 154 Cromwell Road, London SW7 4EF, England.
Tourist Review, Staempfli & Cie AG Bern, Hallerstrasse 7-9, 3012 Berne, Switzerland.
Travel Agent, American Traveler, 2 West 46th Street, New York, NY 10036.
Travel & Leisure, American Express Publishing Co., 1350 Avenue of the Americas, New York, NY 10019.
Travel/Holiday, Travel Building, Floral Park, NY 10011.
Travel Management Newsletter, Reuben H. Donnelley Corp., 2000 Clearwater Drive, Oak Brook, IL 60521.
Travel Trade, Travel Trade Publishing Co., 605 Fifth Avenue, New York, NY 10017.
Travel Weekly, Ziff-Davis Publishing Co., 1 Park Avenue, New York, NY 10016.
Trends in the Hotel-Motel Business, Harris, Kerr, Forster & Co., 420 Lexington Avenue, New York, NY 10017.

U.S. Lodging Industry, Laventhol & Horwath, 1845 Walnut Street, Philadelphia, PA 19103.

Vending Times, 211 E. 43rd Street, New York, NY 10017.
Vintage, PO Box 2739, Boulder, CO 80302.

Washington Report, American Hotel and Motel Association, 777 14th Street N.W., Washington, DC 20005.
Wines and Vines, Hiaring Co., 703 Market Street, San Francisco, CA 94103.
World Convention Dates, Hendrickson Publishing Co., 79 Washington Street, Hempstead, NY 11550.
World Travel, World Tourism Organization, Avda. del Generalissimo. 59, Madrid 16, Spain.
Worldwide Lodging Industry, Horwath & Horwath International and Laventhol & Horwath, 919 Third Avenue, New York, NY 10022.

ADDRESSES OF ORGANIZATIONS AND PUBLISHERS

AMACOM (American Management Associations), 135 West 50th Street, New York, NY 10020.
ATZMI Books, 322 Miller Building, Scranton, PA 18503.
AVI Publishing Co., PO Box 831, Westport, CT 06880.
Harry N. Abrams, Times-Mirror, 110 East 59th Street, New York, NY 10022.
Academic Press, 111 Fifth Avenue, New York, NY 10003.
Addison-Wesley Publishing Co., Jacob Way, Reading, MA 01867.
Administrative Management Society, Willow Grove, PA 19090.
Ahrens Book Co.—*see* **Hayden Book Co.**
Air Transport Association of America, 1709 New York Avenue N.W., Washington, DC 20006.
Airline Passengers Association, 800 W. Airport Freeway, Suite 1120, Irving, TX 75061.
Alchemy Books, PO Box 808, Corte Madera, CA 94925.
Alliance International de Tourism, Quai Gustave Ador, 2, Ch-1207 Geneva, Switzerland.
Allyn & Bacon, College Division, Rockleigh, NJ 07647.
American Accounting Association, 5717 Bessie Drive, Sarasota, FL 33581.
American Alliance for Health, Physical Education & Recreation, 1201 16th Street N.W., Washington, DC 20036.
American Arbitration Association, 140 West 51st Street, New York, NY 10020.
American Association for Leisure and Recreation, 1201 16th Street N.W., Washington, DC 20036.
American Bar Association, 1155 East 60th Street, Chicago, IL 60637.
American Chemical Society, 1155 16th Street N.W., Washington, DC 20036.
American Elsevier Publishing Co., 52 Vanderbilt Avenue, New York, NY 10017.
American Enterprise Institute for Public Policy Research, 1150 17th Street N.W., Washington, DC 20036.
American Gas Association, 1515 Wilson Boulevard, Arlington, VA 22209.
American Hospital Association, 840 North Lakeshore Drive, Chicago, IL 60611.
American Hotel and Motel Association, 888 Seventh Avenue, New York, NY 10019.
American Hotel and Motel Association Educational Institute, Stephen S. Nisbet Building, 1407 South Harrison Road, East Lansing, MI 48823.

American Hotel Association Directory Corp., 888 Seventh Avenue, New York, NY 10019.
American Hotel Register Co., 226 West Ontario Street, Chicago, IL 60610.
American Institute of Certified Public Accountants, 1211 Avenue of the Americas, New York, NY 10036.
American Institute of Real Estate Appraisers—*see* **Ballinger Publishing Co.**
American Law Institute, 4025 Chestnut Street, Philadelphia, PA 19104.
American Management Associations—*see* **AMACOM**
American Meat Institute Foundation, 1600 North Wilson Boulevard, Arlington, VA 22209.
American Society of Real Estate Counselors, 155 East Superior Street, Chicago, IL 60611.
American Society for Testing & Materials, 1916 Race Street, Philadelphia, PA 19103.
American Society of Planning Officials, 1313 East 60th Street, Chicago, IL 60637.
American Society of Travel Agents, 360 Lexington Avenue, New York, NY 10017.
Ann Arbor Science Publishers, PO Box 1425, Ann Arbor, MI 48106.
Arab World and Iran Business Guides, 4 Brattle Square, Philadelphia, PA 02138.
Architectural Press, 9 Queen Anne's Gate, London SWI H9E, England.
Archmedia, 1900 Chestnut Drive, Philadelphia, PA 19103.
Arco Publishing Co., 219 Park Avenue South, New York, NY 10003.
Arno Press, 3 Park Avenue, New York, NY 10017.
Association Internationale de l'Hôtellerie, 89 Rue de Faubourg Saint Honore, 75008 Paris, France.
Association of American Geographers, 1710 16th Street N.W., Washington, DC 20009.
Association of Official Analytical Chemists, Box 540, Benjamin Franklin Station, Washington, DC 20044.
Atheneum Publishers, Vreeland Avenue, Totowa, NJ 07512.
Ayer Press, 210 West Washington Square, Philadelphia, PA 19106.

Ballinger Publishing Co., 11511 Roosevelt Boulevard, Philadelphia, PA 19154.
Bancom Audiovision Corp., Manila, Philippines.
Bank of Hawaii, PO Box 2900, Honolulu, HI 96846.
Barnes & Noble, 10 East 53rd Street, New York, NY 10022.
Barrie & Jenkins, 24 Highbury Crescent, London N51 RX, England.
Barron's Educational Series, 113 Crossways Park Drive, Woodbury, NY 11797.
Basic Books, 10 East 53rd Street, New York, NY 10022.
Benjamin Co., 485 Madison Avenue, New York, NY 10022.
Berkshire Traveller Press, Pine Street, Stockbridge, MA 01262.
Better Homes and Gardens Books, 1716 Locust Street, Des Moines, IA 50336.
Clark Boardman Co. Ltd., 435 Hudson Street, New York, NY 10014.
Bobbs-Merrill—*see* **Howard W. Sams & Co.**
R. R. Bowker, PO Box 1807, Ann Arbor, MI 48106.
British Book Center, 153 East 78th Street, New York, NY 10021.
Brookdale Press, 184 Brookdale Road, Stamford, CT 06903.
William C. Brown Co., 2460 Kerper Boulevard, Dubuque, IA 52001.
Bureau of Business Research, Graduate School of Business Administration, University of Michigan, Ann Arbor, MI 48109.
Bureau of National Affairs, 1231 25th Street N.W., Washington, DC 20037.
Burgess Publishing Co., 7801 Ohms Lane, Minneapolis, MN 55435.
Business News Publishing Co., PO Box 6000, Birmingham, MI 48012.
Business Publishers, Richard D. Irwin, 1818 Ridge Road, Homewood, IL 60430.

CBI (Cahners Books International), 51 Sleeper Street, Boston, MA 02110.
CRC Press, Chemical Rubber Co., 2255 Palm Beach Lakes Boulevard, West Palm Beach, FL 33409.
California Hotel & Motel Association, 520 Capitol Mall, Sacramento, CA 95814.
Cambridge University Press, 510 North Avenue, New Rochelle, NY 10801.
Canadian Government Office of Tourism, Ottawa K1A 0H6, Canada.
Canadian Hotel & Restaurant Book Service, 481 University Avenue, Toronto M5W 1A7, Canada.
Cateill Ltd., 1500 Atwater, Suite 1200, Montreal, Quebec H32 1X5, Canada.
Center for Urban Policy Research, Rutgers University, New Brunswick, NJ 08903.
Chain Store Age—*see* **Lebhar-Friedman**
Chain Store Publishing—*see* **Lebhar-Friedman**
Chemical Publishing Co., 155 West 19th Street, New York, NY 10011.
Chicago and Illinois Restaurant Association, 20 North Wacker Drive, Chicago, IL 60606.
Chilton Book Co., 201 King of Prussia Road, Radnor, PA 19089.
Club Managers Association of America, 5530 Wisconsin Avenue N.W., Washington, DC 20015.
Collier Books, Collier-MacMillan—*see* **MacMillan Publishing Co.**
Columbia Books, 734 15th Street N.W., Suite 601, Washington, DC 20005.
Constable and Co. Ltd., 10 Orange Street, London WC2H 7EG, England.
Continental Publications, PO Box 2248, Palos Verdes, CA 90274.
Coopers and Lybrand, 1251 Avenue of the Americas, New York, NY 10020.
Cornell University College of Agriculture and Life Sciences, Roberts Hall, Ithaca, NY 14853.
Cornell University School of Hotel Administration, 327 Statler Hall, Ithaca, NY 14853.
Council of Planning Librarians, PO Box 229, Monticello, IL 61856.
Council on Hotel, Restaurant, and Institutional Education, Human Development Building, Room 12, University Park, PA 16802.
Counting House Publishing Co., Thiensville, WI 53092.
Coward, McCann & Geoghegan, 390 Murray Hill Parkway, East Rutherford, NJ 07073.
Crossing Press, 17 West Main Street, Trumansburg, NY 14886.
Thomas Y. Crowell, 666 Fifth Avenue, New York, NY 10019.
Crown Publishers, 419 Park Avenue South, New York, NY 10016.
Culinary Arts Institute, 1975 Hawthorne Place, Chicago, IL 60657.
Culinary Arts Society, 270 Madison Avenue, Suite 1302, New York, NY 10016.
Culinary Institute of America, North Road, Hyde Park, NY 12538.

Dartnell Corp., 4660 Ravenswood Avenue, Chicago, IL 60640.
John Day Co., 666 Fifth Avenue, New York, NY 10019.
Dell Publishing Co., Delacourt Press, 1 Dag Hammarskjold Plaza, 245 East 47th Street, New York, NY 10017.
Dial Press—*see* **Dell Publishing Co.**
Discover America Travel Organizations, 1100 Connecticut Avenue N.W., Washington, DC 20036.
Doolco, 2016 Canton Street, Dallas, TX 75201.
Doubleday & Co., 501 Franklin Avenue, Garden City, NY 11530.
Dover Publications, 180 Varick Street, New York, NY 10014.
Dow Jones-Irwin—*see* **Richard D. Irwin**
Dryden Press, 901 North Elm Street, Hinsdale, IL 60521.
Dun & Bradstreet, Dun Donnelly Publishing Corporation, 666 Fifth Avenue, New York, NY 10019.
E. P. Dutton and Co., 201 Park Avenue South, New York, NY 10003.
Duxbury Press—*see* **Wadsworth Publishing Co.**

The Economist Intelligence Unit Ltd., Spencer House, 27 St. James Place, London SW1A 1NT, England.
Edwards Brothers, 2500 South State Street, Ann Arbor, MI 48104.
Elbert Hubbard Foundation, Roycraft Campus, East Aurora, NY 14052.
Electrical Information Publications, 2131 Fordem Avenue, Madison, WI 53701.
Elsevier Scientific Publishing Co., 52 Vanderbilt Avenue, New York, NY 10017.
M. Evans and Company, 216 East 49th Street, New York, NY 10017.
Executive Enterprises Publications Co., PO Box 6532, La Jolla, CA 92037.
Executive Publications, PO Box 92, Harvard Square, Cambridge, MA 02138.
Exposition Press, 900 South Oyster Bay Road, Hicksville, NY 11801.

Faber and Faber Ltd., 101 South Broadway, Salem, NH 03079.
Fawcett Publications, Fawcett Place, Greenwich, CT 06830.
Frederick Fell, 386 Park Avenue South, New York, NY 10016.
Fielding Publications—*see* **William Morrow & Co.**

Financial Accounting Standards Board, High Ridge Park, Stamford, CT 06905.
Financial Executives Research Foundation, 633 Third Avenue, New York, NY 10017.
Financial Publishing Co., 82 Brookline Avenue, Boston, MA 02215.
Follett Publishing Co., 1010 West Washington Boulevard, Chicago, IL 60607.
Fox Publishing Co., Bradford, VT 05033.
Free Press—*see* **MacMillan Publishing Co.**
W. H. Freeman & Co., 660 Market Street, San Francisco, CA 94104.

Georgia State University School of Business Administration, Publishing Services Division, University Plaza, Atlanta, GA 30303.
Glencoe Publishing Co., MacMillan Co., Riverside, NJ 08075.
Golem Press, PO Box 1342, Boulder, CO 80306.
Greater Chicago Hotel and Motel Association, Illinois Athletic Club Building, 112 South Michigan Avenue, Chicago, IL 60603.
Grid, 4666 Indianola Avenue, Columbus, OH 43214.
Grolier, Sherman Turnpike, Danbury, CT 06816.
Grosset & Dunlap, 51 Madison Avenue, New York, NY 10010.

H. P. Books, PO Box 5367, Tucson, AZ 85703.
Halstead Press—*see* **John Wiley & Sons**
Hammond, 515 Valley Street, Maplewood, NJ 07040.
Harcourt Brace Jovanovich, 757 Third Avenue, New York, NY 10017.
Harper and Row Publishers, Keystone Industrial Park, Scranton, PA 18512.
Harris, Kerr, Forster & Co., 420 Lexington Avenue, New York, NY 10017.
Harvard University Press, 79 Garden Street, Cambridge, MA 02138.
Hastings House Publishers, 10 East 40th Street, New York, NY 10016.
Hawthorn Books, 260 Madison Avenue, New York, NY 10016.
Hayden Book Co., 50 Essex Street, Rochelle Park, NJ 07662.
Holiday Inn University, Olive Branch, MS 38654.
Hospitality Institute, Ireland Educational Group, 1652 Groton Court, Wheaton, IL 60187.
Holt, Rinehart & Winston, 383 Madison Avenue, New York, NY 10017.
Hotel Association of New York City, 141 West 51st Street, New York, NY 10019.
Hotel and Restaurant Employees and Bartenders International Union, 120 East Fourth Street, Cincinnati, OH 45202.
Hotel Sales Management Association, 362 Fifth Avenue, New York, NY 10001.
Houghton Mifflin Co., 2 Park Street, Boston, MA 02107.

ITT Educational Services—*see* **Howard W. Sams & Co.**
India Ministry of Information and Broadcasting, Publications Division, New Delhi, India.
Industrial Press, Building 424, Raritan Center, Edison, NJ 08817.
Info Press, 736 Center Street, Lewiston, NY 14092.
Inform, 25 Broad Street, New York, NY 10004.
Institute for Contemporary Studies, 260 California Street, Suite 811, San Francisco, CA 94111.
Institute for Management, Old Saybrook, CT 06475.
Institute for Social Research, University of Michigan, 426 Thompson Street, Ann Arbor, MI 48106.
Institute of Certified Travel Agents, 148 Linden Street, PO Box 56, Wellesley, MA 02181.
Institute of Real Estate Management, 155 East Superior Street, Chicago, IL 60611.
Insurance Company of North America, 1600 Arch Street, Philadelphia, PA 19103.
International Council of Shopping Centers, 445 Park Avenue, New York, NY 10022.
International Foodservice Manufacturers Association, 1 East Wacker Drive, Chicago, IL 60601.
International Franchise Association, 7315 Wisconsin Avenue, Suite 600W, Washington, DC 20014.
International Labour Office, Washington Branch, 1750 New York Avenue N.W., Suite 311, Washington, DC 20006.
International Personnel Management Association, 1313 East 60th Street, Chicago, IL 60637.
International Publications Service, 114 East 32nd Street, New York, NY 10016.
International Publishers, 381 Park Avenue South, Suite 1301, New York, NY 10016.
International Scholarly Book Service, PO Box 555, Forest Grove, OR 97116.
International Union of Official Travel Agents—*see* **World Tourism Organization**
International Wine Society, 304 East 45th Street, New York, NY 10017.
Iowa State University Press, South State Avenue, 112C Press Office, Ames, IA 50010.
Richard D. Irwin, 1818 Ridge Road, Homewood, IL 60430.

Johns Hopkins University Press, Baltimore, MD 21218.
Johnson Publishing Co., PO Box 990, Boulder, CO 80306.

Keats Publishing Co., 36 Grove Street, PO Box 876, New Canaan, CT 06840.
J. J. Keller and Associates, 145 West Wisconsin Avenue, Neenah, WI 54956.
Alfred A. Knopf—*see* **Random House**

Lateiner Publishing, 1 Strawberry Hill Avenue 10-E, Stamford, CT 06902.
Laventhol and Horwath, 1845 Walnut Street, Philadelphia, PA 19103.
Law Journal Press, New York Law Journal Building, 258 Broadway, New York NY 10007.
Learning Systems Company—*see* **Richard D. Irwin**
Lebhar-Friedman Books, 425 Park Avenue, New York, NY 10020.
Lehigh Books, 54 West 21st Street, New York, NY 10010.
Lenz and Reicker, 75 Varick Street, New York, NY 10013.
Lester & Orpen, 42 Charles Street East 8 FLR, Toronto, M4Y IT4, Canada.
Lexington Books, D. C. Heath and Co., 125 Spring Street, Lexington, MA 02173.
J. B. Lippincott Co., East Washington Square, Philadelphia, PA 19105.
Little, Brown & Co., 200 West Street, Waltham, MA 02154.
Longmark, Canada Ltd., 55 Barber Green Road, Don Mills, Ontario, Canada.
Lord Publishing Co., 130 Clarke Road, Needham, MA 02192.
Lyceum Books, PO Box 113, Wilton, CT 06897.

MIT Press, 28 Carleton Street, Cambridge, MA 02142.
McCutchan Publishing, 2526 Grove Street, Berkeley, CA 94704.
McGill-Queens University Press, 1020 Pine Avenue West, Montreal, Quebec, Canada.
McGraw-Hill Book Co., 1221 Avenue of the Americas, New York, NY 10020.
David McKay Co., 750 Third Avenue, New York, NY 10017.
MacMillan Publishing Co., Riverside, NJ 08075.
Management Information Center, PO Box 357, Miami, FL 33148.
Manhattan Menus, 919 Third Avenue, New York, NY 10022.
Mason/Charter, 641 Lexington Avenue, New York, NY 10022.
Mayfield Publishing Co., 285 Hamilton Avenue, Palo Alto, CA 94301.
Meadowbrook Press, 16648 Meadowbrook Lane, Wayzata, MN 55391.
R. S. Means Co., 100 Construction Plaza, Duxbury, MA 02332.
Meredith Corporation, 1716 Locust Street, Des Moines, IA 50336.
Michigan State University Press, East Lansing, MI 48823.
Mobil Oil Corporation, 150 East 42nd Street, New York, NY 10017.
Money Market Directories, 370 Lexington Avenue, New York, NY 10017.
Morgan-Grampian, 205 East 42nd Street, New York, NY 10017.
William Morrow & Co., 6 Henderson Drive, West Caldwell, NJ 07006.

National Academy of Science, Printing and Publishing Offices, 2101 Constitution Avenue, Washington, DC 20418.
National Association of Accountants, 919 Third Avenue, New York, NY 10022.
National Association of Home Builders, 15th and M Streets N.W., Washington, DC 20005.
National Association of Meat Purveyors, 252 West Ina Road, Tucson, AZ 85704.
National Association of Pool Owners, 10 Kearney Road, Box 222, Needham, MA 02194.
National Association of Realtors, 430 North Michigan Avenue, Chicago, IL 60611.
National Club Association, Suite 602, 1129 20th Street N.W., Washington, DC 20036.

National Education Standards, 650 South Grand Avenue, Suite 1002, Los Angeles, CA 90017.
National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.
National Innkeeping Association, 122 East High Street, Jefferson City, MO 65101.
National Institute for the Foodservice Industry, 120 Riverside Plaza, Chicago, IL 60606.
National Institute for Occupational Safety and Health, Office of Technical Publications, PO Building, Room 530, Cincinnati, OH 45202.
National Live Stock and Meat Board, 444 North Michigan Avenue, Chicago, IL 60611.
National Recreation and Park Association, 1601 North Kent Street, Arlington, VA 22209.
National Restaurant Association, Suite 2600, One IBM Plaza, Chicago, IL 60611.
National Sanitation Foundation, NSF Building, 3475 Plymouth Road, Ann Arbor, MI 48106.
National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.
Nelson-Hall Co., 325 West Jackson Boulevard, Chicago, IL 60600.
New American Library, 1301 Avenue of the Americas, New York, NY 10019.
New University Education, Bingley Co., (Clive Ltd.), 16 Pembridge Street, London W11, England.
New York State Department of Commerce, 99 Washington Avenue, Albany, NY 12245.
New York State Recreation and Park Society, PO Box 68, Peekskill, NY 10566.
New Zealand Tourist and Publicity Department, Wellington, New Zealand.
Newnes-Butterworth, Burough Green, Sevenoaks, Kent TN 15 8 PH, England.
Newspaper Enterprises Association, 230 Park Avenue, New York, NY 10017.
North Holland—*see* **Elsevier Scientific Publishing Co.**
W. W. Norton & Co., 500 Fifth Avenue, New York, NY 10036.
Noyes Data Corporation, Mill Road at Grand Avenue, Park Ridge, NJ 07656.

Ohio State University, College of Administrative Science, Columbus, OH 43210.
Opinion Research Corporation, North Harrison, Princeton, NJ 08540.
Organization of American States, 17th and Constitution Avenues N.W., Washington, DC 20006.
Ottenheimer Publishers, 1632 Reisterstown Road, Baltimore, MD 21208.
Owen-Sterling, Grand Rapids, MI 49503.
Oxford University Press, 1600 Pollitt Drive, Fair Lawn, NJ 07410.

Paddington Press Ltd.—*see* **Grosset & Dunlap**
Pantheon Books, Random House, 400 Hahn Road, Westminster, MD 21157.
Parker Publishing Co.—*see* **Prentice-Hall**
Passive Energy Systems, PO Box 499, Blacksburg, VA 24060.
Pendragon House, 2595 East Bayshore Drive, Palo Alto, CA 94303.
Penguin Books, 625 Madison Avenue, New York, NY 10022.
Peninsular Publishing Co., 2503 Jackson Bluff Road, Tallahassee, FL 32301.
Pennsylvania State University Press, University Park, PA 16802.
Pergamon Press, Maxwell House, Fairview Park, Elmsford, NY 10523.
Petrocelli/Charter—*see* **Mason/Charter**
Pica Editions, Pica Editorial Ltd., 26 Parkway, London NW1, England.
Pilot Books, 347 Fifth Avenue, New York, NY 10016.
Pinnacle Books, 1 Century Plaza, 2029 Century Park East, Los Angeles, CA 90067.
Pitman Publishing Corp., 6 Davis Drive, Belmont, CA 94022.
Potter, Clarkson N.—*see* **Crown Publishers**
Practising Law Institute, 810 Seventh Avenue, New York, NY 10019.
Praeger Publishing—*see* **Holt, Rinehart & Winston**
Prentice-Hall, Box 903, Englewood Cliffs, NJ 07632.
Price Analysis Systems, PO Box 8516, Minneapolis, MN 55408.
Princeton University Press, 41 William Street, Princeton, NJ 08540.
Profit Sharing Research Foundation, 1718 Sherman Avenue, Evanston, IL 60201.
G. P. Putnam's Sons, 390 Murray Hill Parkway, East Rutherford, NJ 07073

Quadrangle/New York Times—*see* **Harper and Row**

Rand McNally & Co., PO Box 7600, Chicago, IL 60680.
Random House, 457 Hahn Road, Westminster, MD 21157.
Rawson Associates—*see* **Atheneum Publishers**
Henry Regnery Co., 180 North Michigan Avenue, Chicago, IL 60601.
D. Reidel Publishing Co., 160 Old Derby Street, Hingham, MA 02043.
Resources for the Future, 1755 Massachusetts Avenue N.W., Washington, DC 20036.
Resume Researchers, 239 Fourth Avenue, Pittsburgh, PA 15222.
Reston Publishing Co., Prentice-Hall, Englewood Cliffs, NJ 07632.
Rodale Press, 33 East Minor Street, Emmaus, PA 18049.

St. Augustinus Boekhandel, Curaçao, Antilles Islands.
St. Martin's Press, 175 Fifth Avenue, New York, NY 10010.
Howard W. Sams & Co., 4300 West 62nd Street, Indianapolis, IN 46206.
San Francisco Book Co.—*see* **Simon and Schuster**
W. B. Saunders Co., Columbia Broadcasting System, West Washington Square, Philadelphia, PA 19105.
Schocken Books, 200 Madison Avenue, New York, NY 10016.
Scholars Book Company, 4431 Mount Vernon, Houston, TX 77006.
Charles Scribner's Sons, Shipping and Service Center, Vreeland Avenue, Totawa, NJ 07512.
Security World Publishing Co., 2639 South La Cienega Boulevard, Los Angeles, CA 90034.
Siebel Publishing Company, 4049 West Patterson Avenue, Chicago, IL 60646.
Signet Books—*see* **New American Library**
Simon and Schuster, 1230 Avenue of the Americas, New York, NY 10020.
Simpson-Doyle Co., Phoenix Book Publishers, 1614 East McLullan Boulevard, Phoenix, AZ 85106.
Society for the Advancement of Food Service Research, 2710 North Salisbury Street, West Lafayette, IN 47906.
Society for Industrial Realtors, 935 15th Street N.W., Washington, DC 20005.
Society of Real Estate Appraisers, 7 South Dearborn Street, Chicago, IL 60603.
South-Western Publishing Co., 5101 Madison Road, Cincinnati, OH 45227.
Southern University Press, 130 South 19th Street, Birmingham, AL 35233.
E. & F. N. Spon Ltd., 11 New Fetter Lane, London EC4P 4EE, England.
Stackpole Books, Cameron & Keller Streets, Harrisburg, PA 17105.
Stamats Publishing Co., 427 6th Avenue, Cedar Rapids, IA 52406.
Stein and Day, 122 East 42nd Street, New York, NY 10017.
Structures Publishing Co., Box 423, Farmington, MI 48024.
Struik, Cape Town, Union of South Africa.
Successful Meetings Book Division, 633 Third Avenue, New York, NY 10017.

Ten Speed Press, PO Box 7123, Berkeley, CA 94707.
Charles C. Thomas, 301–27 East Lawrence Avenue, Springfield, IL 62717.
Time-Life Books, Little, Brown & Co., 34 Beacon Street, Boston, MA 02106. *For library and school orders:* Silver Burdette Co., Morristown, NJ 13664.
Touche Ross, 1633 Broadway, New York, NY 10019.
Tourism Development Company, Fomento Building, 268 Ponce de Leon Avenue, Hato Rey, PR 00918.
Tourism International Press, 154 Cromwell Road, London SW7, England.
Tourist Planning and Research Ltd., Suite 433, 52–54 High Holborn House, London WC1 V6R, England.
Travel Data Center, 1100 Connecticut Avenue N.W., Washington, DC 20038.
Travel Information Bureau, PO Box 1051, Kings Park, NY 11754.
Travel Marketing Consultant Service, 37 Haverford Road, Hicksville, NY 11802.
Tudor Publishing Company, 31 West 46th Street, New York, NY 10036.
Two Continents Publishing Group, 5 South Union Street, Lawrence, MA 01843.

UCN Register Div., Anderson Group, PO Box 508, Madison, NJ 07940.

Unipub, PO Box 433, Murray Hill Station, New York, NY 10016.
United States Government Printing Office, Division of Public Documents, Washington, DC 20402.
United States Travel Data Center, Suite 340, 1100 Connecticut Avenue N.W., Washington, DC 20036.
University of California Press, 2223 Fulton Street, Berkeley, CA 94720.
University of Colorado, Business Research Division, Graduate School of Business Administration, Boulder, CO 80302.
University of Hawaii, College of Business Administration, Industrial Relations Center, 2444 Dole Street, Honolulu, HI 96822.
University of Massachusetts Press, PO Box 429, Amherst, MA 01002.
University of Michigan Press, 615 East University, Ann Arbor, MI 48106.
University of Nevada, Bureau of Business and Economic Research, Reno, NV 89557.
University of Texas, Bureau of Business Research, Graduate School of Business, PO Box 7459, University Station, Austin, TX 78712.
University of Wales, Cardiff, Wales.
University of Wisconsin Press, Box 1379, Madison, WI 53701.
Urban Institute, Publications Office, 2100 M Street N.W., Washington, DC 20037.
Urban Land Institute (ULI), 1200 18th Street N.W., Washington, DC 20036.

Van Nostrand-Reinhold, Litton Educational Publishing Co., 7625 Empire Drive, Lexington, KY 41042.

Arthur Vanous Co., One Richard Court, River Edge, NJ 07661.
Viking Press, 625 Madison Avenue, New York, NY 10022.
Virtue Books—*see* **Continental Publications**

Wadsworth Publishing Co., 10 Davis Drive, Belmont, CA 94002.
Warren, Gorham & Lamont, 210 South Street, Boston, MA 02111.
Watson-Guptill Publications, 2160 Patterson Street, Cincinnati, OH 45214.
West Publishing Co., PO Box 3526, St. Paul, MN 55165.
Whitney Library of Design—*see* **Watson-Guptill Publications**
John Wiley & Sons, 605 Third Avenue, New York, NY 10016.
Wilton Enterprises, 1602 South Michigan Avenue, Chicago, IL 60616.
Wine and Spirit Publications, Southbank House, Black Prince Road, London SE1, England.
Wines and Vines, Hiaring Co., 703 Market Street, San Francisco, CA 94103.
Winthrop Publishing Co., Prentice-Hall, Englewood Cliffs, NJ 07632.
Woodbridge Press Publishing Co., Box 6189, Santa Barbara, CA 93111.
World Publishing Co., 2231 West 110th Street, Cleveland, OH 44102.
World Tourism Organization, Avenida del Generalissimo, 59, Madrid 16, Spain.
Peter H. Wyden, 750 Third Avenue, New York, NY 10017.

Yale University Press, 92A Yale Station, New Haven, CT 06520.

Ziff-Davis Publishing Co., One Park Avenue, New York, NY 10016.

Elderly Housing Questionnaire

I am responding for:

___ Myself; ___ My parent(s); ___ My friend(s)

BACKGROUND AND HOUSEHOLD INFORMATION

1. Which of the following best describes your present housing type?

   [ ] I own a single family home
   [ ] I rent an apartment
   [ ] I have a room in someone else's house
   [ ] I live at: (check one) [ ] Marian Manor
   [ ] Court Tower
   [ ] Mainview Apartments
   [ ] Simeanna
   [ ] Other, please specify _____

2. How long have you lived in your present home?

   No. years = _____

3. Which of the following best describes your present living arrangement?

   [ ] I live alone
   [ ] I live with my spouse only
   [ ] I live with one of my children in my home
   [ ] I live in the home of one of my children
   [ ] I live with my children and my spouse
   [ ] I live with a friend or friends
   [ ] I live with relatives other than my spouse and children
   [ ] Other, please specify _____

4. What is your present marital status? Are you:

   [ ] Single [ ] Married [ ] Widowed

5. What is your age (your spouse's age)?

   Your Age _____ Your Spouse's Age _____

6. Are you:

   [ ] Male [ ] Female

7. Do you need any help in moving about or walking at this time?

[ ] Need no assistance at all
[ ] Need assistance
  [ ] Use cane
  [ ] Use walker
  [ ] Use wheelchair

8. Below is a list of activities that many of us have difficulty with as we grow older. Do you have: NO DIFFICULTY, SOME DIFFICULTY, or find you CANNOT DO these activities?

	NO DIFFICULTY	SOME DIFFICULTY	CANNOT DO IT
Cooking	[ ]	[ ]	[ ]
Shopping	[ ]	[ ]	[ ]
Housekeeping	[ ]	[ ]	[ ]
Personal care (bathing)	[ ]	[ ]	[ ]
Getting out of the house	[ ]	[ ]	[ ]
Hearing on the telephone	[ ]	[ ]	[ ]
Reading the newspaper	[ ]	[ ]	[ ]
Taking medication	[ ]	[ ]	[ ]
Going up and down stairs	[ ]	[ ]	[ ]
Personal finances	[ ]	[ ]	[ ]

9. Do you have any continuing or chronic health problems, physical problem, or handicap?

[ ] No

[ ] Yes. Please specify _____

10. In general, which of the following best describes your overall level of health?

[ ] Excellent (plenty of energy)
[ ] Average (good health - no problems and enough energy)
[ ] Fair (some health problems but able to live completely independently)
[ ] Need some care or assistance
[ ] Need full-time care and assistance

11. IF you were to need help or assistance right now, who could you depend upon? (Check as many as apply.)

[ ] Family
[ ] Friends
[ ] Neighbors
[ ] Church group
[ ] Would prefer to hire people to help me
[ ] Would prefer to use community support services
[ ] Others, please specify _____

12. Do you currently use any of the following Community Support Services?

[ ] Home Aide Program
[ ] Nutrition center meals
[ ] Meals on Wheels
[ ] Visiting Nurse Associates
[ ] Adult day care
[ ] Other, please specify _____
[ ] None

13. IF you had some health problems which were making it difficult for you to stay in your home, would the availability of community support services make it possible for you to remain there?

[ ] Yes.
[ ] Yes, depending on the cost of the service.
[ ] Possibly.
[ ] Unlikely.
[ ] I would prefer to live in a facility where I could be closer to support services.

14. While the proposed facility will enable people who need some assistance with daily living activities to continue living independently, some of the residents may need to use walking aids such as canes, walkers or wheelchairs. What is your reaction to living near people who are less able than you may be?

[ ] I would prefer not to live with people who are noticeably less capable than I am.
[ ] I am comfortable with people who have noticeable physical handicaps and would not be affected by sharing the same facility with them.

15. IF you could choose a type of housing best suited for your current needs, would you?

[ ] Live in an apartment, such as in Marian Manor, Court Tower or Simeanna.
[ ] Live in a single family house.
[ ] Live in a condominium.
[ ] Live in a private apartment buiding that rents to all age levels including families with children.
[ ] Live in a private retirement center such as Zion Lutheran or Evergreen Manor.
[ ] Live in a retirement or independent living facility without any assisted-living or nursing care facility.
[ ] Live in a facility designed especially for the elderly, which provides a continuum of health care needs, ranging from independent living to skilled nursing care, each housed separately and provided with different amenities.
[ ] Stay where I am.

16. If there came a time when you might need occasional or perhaps ongoing assistance with daily tasks, and you had your choice, in what TYPE OF HOUSING would you REALLY LIKE TO LIVE?

_____

_____

17. Have you given any serious thought to moving from your present home?

[ ] No [ ] Yes. For what reason? _____

_____

18. If yes, how soon would you want to move?

[ ] In less than one year
[ ] In one to three years
[ ] In three years or more

19. In the future, which of the following event(s) might trigger the need to move?

[ ] Health problem
[ ] Death of a spouse
[ ] Financial hardship
[ ] Friction with my relatives
[ ] Children moving away
[ ] Other _____
[ ] None of these events would cause me to move

20. If you were seriously considering a move to a facility specifically designed for the elderly, would you consult someone else for advice in making your decision?

[ ] No [ ] Yes. If so, who would you consult:

[ ] Children
[ ] Friends
[ ] Clergy
[ ] Doctor
[ ] Attorney
[ ] Other _____

THE PLANNED PROJECT AND THE CONGREGATE LIVING CONCEPT

The program now being planned would provide small private apartments for individuals and couples, plus meal service in a large family dining room, some local activity rooms, and a resident manager, who could schedule supportive services as you needed them, and who would be available for 24-hour emergency assistance.

The apartments in the planned facility would be in a separate building located on the same campus as Bethel Home and Simeanna. Transportation would be provided for shopping and other errands, and you would have priority admission to Bethel Home if required.

To answer the next few questions, just PRETEND for a moment that you might have the need or be interested in living in an congregate living facility such as that being considered by the Lutheran Homes of Oshkosh.

21. To answer the next two pages of questions, please refer to the drawings. There will be three different plans presented: Plan A, Plan B, and Plan C. The numbers in the diagram relate to the question number.

Which would you prefer? (Check only one of the two possibilities.)

1. [ ] The kitchenette facing narrow hallway (Plan A #1), OR
   [ ] The kitchenette facing open sitting area (Plan B #1).

2. [ ] The smaller bathroom (Plan A #2) with the tub and toilet next to each other for convenience, OR
   [ ] The larger bathroom (Plan B #2) with the tub and toilet separate from each other but more accessible if I needed assistance.

3. [ ] A sliding door in the bathroom to save space (Plan A #3), OR
   [ ] A swinging door in the bathroom which is easier to open (Plan B #3).

4. [ ] A full closet (Plan A #4), OR
   [ ] A half-closet and half desk (Plan B #4).

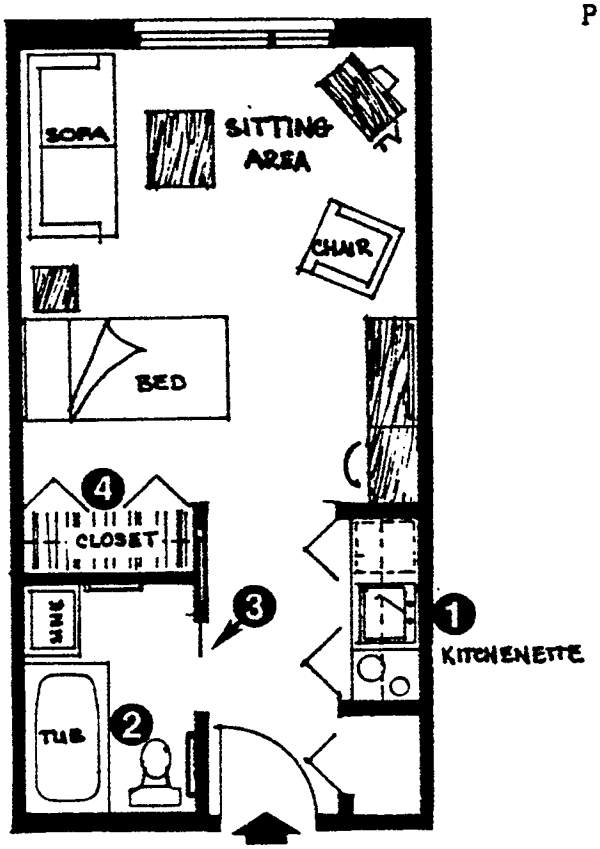
5. Overall, which do you prefer?

   I prefer Plan ___ because _____

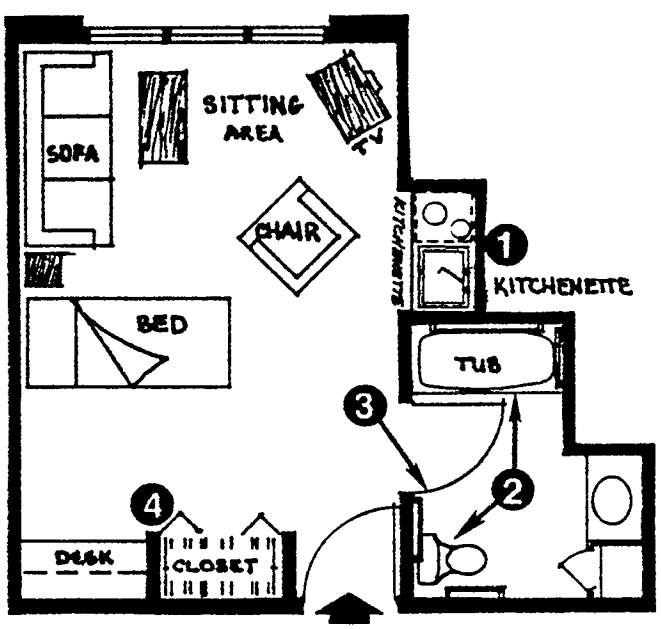
   _____

6. What do you think is a reasonable <u>monthly</u> rent to pay for:

   Plan A = $_____ Plan B = $_____



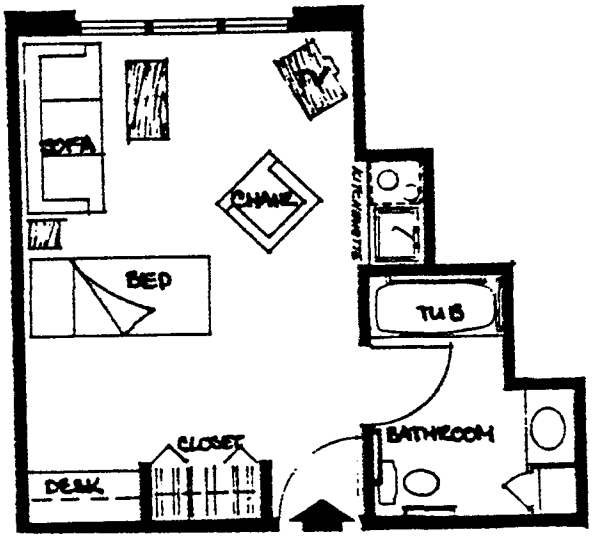
Plan A



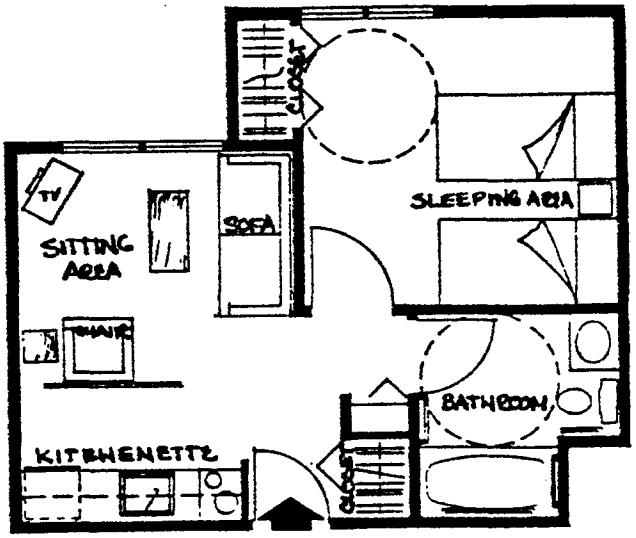
Plan B

7. Plan B has a combined sitting and sleeping area; Plan C has a separated sitting and sleeping area and would cost about $100 per month more in rent than Plan B. Which do you prefer?

[ ] I prefer Plan B [ ] I prefer Plan C



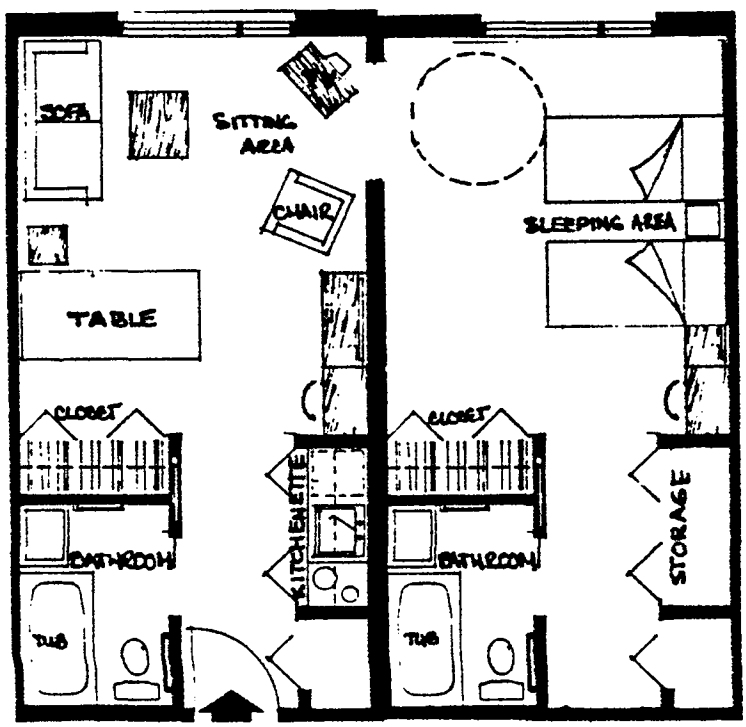
Plan B



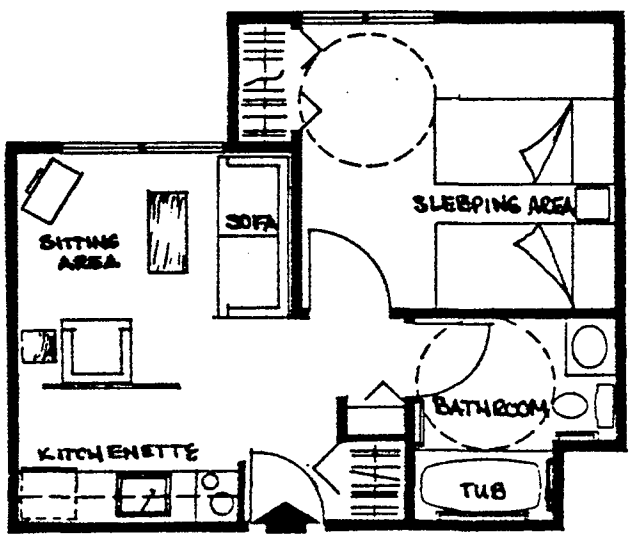
Plan C

8. For two people living together, what would you prefer?

[ ] Two Plan A units (650 sq.ft.), side-by-side and connected, at twice the monthly rent of a single Plan A.
[ ] Plan C (325 sq.ft.), with separation of sitting and sleeping area, at about $100 per month more than a single Plan A.



Plan A A



Plan C

22. What type of KITCHEN FACILITIES would you prefer?

[ ] I'd like to have a FULL KITCHEN in my apartment even though I may eat some meals in a central dining room with friends.
[ ] I'd like to have a KITCHENETTE (a small refrigerator and a small stove) in my apartment for preparing my own meals and snacks.
[ ] I'd like to have a SMALL REFRIGERATOR in my room, NO STOVE, but possibly a coffee maker in order to prepare occasional meals and snacks.
[ ] I'd prefer NO KITCHEN FACILITIES SINCE I would expect to eat all meals in a central dining room with friends.

23. What type of ARRANGEMENT FOR MEALS would you prefer? (Keep in mind there would be a central dining room in this facility.)

[ ] I'd prefer to have ALL MEALS OPTIONAL, on a pay-as-you-go basis, and not included in my monthly rental fee.
[ ] I'd prefer to have ONE MEAL PER DAY PROVIDED in the central dining room, included in my monthly rental fee, and the other two meals optional.
[ ] I'd prefer to have TWO MEALS PER DAY PROVIDED in the central dining room, included in my monthly rental fee and the other meal optional.
[ ] I'd prefer to have ALL THREE MEALS PER DAY PROVIDED in the central dining room and included in my monthly fee.

24. Would you be able to let the dining room facility know one month in advance just how many meals per day you would like to eat in the central dining room during the next month?

[ ] Yes
[ ] No
[ ] No, but I could do so on a weekly basis, even though the price may be slightly higher.
[ ] No, but I could do so on a daily basis, even though the price would be slightly higher.

25. If you were at the point where you had decided to move from your current home to a facility such as that being planned, chances are good you would have too much furniture and household items for your small apartment. Would you:

[ ] Sell off the surplus
[ ] Store it with children or relatives
[ ] Be willing to pay for a private storage locker
[ ] Decide not to choose a retirement home that did not have extra storage room space

26. Does this concept appeal to you as an alternative to your present living arrangement?

[ ] Yes [ ] Yes, if and when needed [ ] No

27. What do you like about this concept?

1._____

2._____

3._____

28. Is there anything you dislike about this concept?

1._____

2._____

3._____

29. The proposed facility would be built on the same campus as Bethel Home and Simeanna. Are you acquainted with these facilities?

[ ] Yes [ ] No

If yes, how do you feel about the presence of the two facilities? I feel:

	POSITIVE	NOT IMPORTANT	NEGATIVE
A. The availability of Bethel Homes Nursing Care is	[ ]	[ ]	[ ]
B. The identification of my apartment with the Bethel Home Campus is	[ ]	[ ]	[ ]
C. The convenience of access to friends at Simeanna is .	[ ]	[ ]	[ ]
D. The identification of my apartment with the Simeanna Campus is	[ ]	[ ]	[ ]

30. IF YOU OWN A HOME, what price do you think it would sell for today? Would it sell for ...

[ ] Less than $30,000
[ ] $30,000 to $40,000
[ ] $40,000 to $50,000
[ ] $50,000 or more

How did you arrive at this figure? _____

_____

For statistical purposes only, we need to know your total annual income for 1982 and what you spend on housing. Note: There is no way of our knowing your identity.

31. What was your (and your spouse's) total ANNUAL gross income for 1982?

[ ] Less than $5,000
[ ] $5,000 to $10,000
[ ] $10,000 to $15,000
[ ] $15,000 to $20,000
[ ] $20,000 to $30,000
[ ] More than $30,000

33. What are your total MONTHLY housing costs?

IF YOU RENT:		IF YOU OWN:	
Rent =	$ _____	Mortgage =	$ _____
Utilities =	$ _____	Taxes =	$ _____
Renter's Insurance =	$ _____	Utilities =	$ _____
Repairs =	$ _____	Homeowner's Insurance =	$ _____
		Repairs =	$ _____
TOTAL MONTHLY HOUSING COST	$ _____	TOTAL MONTHLY HOUSING COST	$ _____

33. People often have a number of sources of income. Which of the following are your main sources of income? (Please check as many as are appropriate.)

[ ] Salary/wages
[ ] Social security
[ ] Pension/Annuity
[ ] Assistance from family members
[ ] Other, please specify _____
[ ] Assistance from community
[ ] Interest/dividends on investments
[ ] Income rental property

34. Are you able to pay your living expenses each month without going into savings?

[ ] Yes [ ] No

35. If this congregate living concept appeals to you as an alternative to your present living arrangement, when would you seriously consider a move?

[ ] I would like to seriously explore the possibility of moving now.
[ ] I might consider living in such a facility in a year or so.
[ ] I might be interested, but I would want to wait to see how others liked it first.
[ ] I would be interested ONLY if something happened to me so that I needed the extra help with daily living activities.
[ ] I would never be interested in such a facility.

IF YOU WOULD LIKE TO LEARN MORE ABOUT THE PROJECT AS IT EVOLVES, PLEASE CHECK THE APPROPRIATE BOX ON THE ENCLOSED RETURN POSTCARD AND RETURN IT TO US. (Because we want to keep your responses confidential, do not sign your name to this survey. Those who would like to learn more about the project as it evolves, should do so separately by returning the enclosed postcard and checking the appropriate box.)

THANK YOU FOR YOUR HELP!

PLEASE RETURN THE SURVEY IN THE POSTAGE PAID ENVELOPE AS SOON AS POSSIBLE.

Additional Comments: _____

_____

_____

_____

_____

7/83

Page from questionnaire currently in process.

40. Are you able to pay your living expenses each month without going into savings?

[ ] Yes
[ ] No
[ ] Occasionally need to go into savings

41. The payment plan being considered requires an entry fee, partially refundable, along with monthly fees. Generally with a higher entry fee a lower monthly rent is possible. As envisioned currently, the monthly fee would include the enjoyment of an apartment including utilities (except phone), ~~a~~ daily meal in the dining room, scheduled transportation, 24-hour emergency assistance, and the use of community rooms. Although the fees and monthly rents for the proposed project have not been determined, please indicate which combination of entry fee and monthly rent would be most suitable for you:

		ENTRY FEE		MONTHLY RENT
1.	[ ]	Less then $10,000	but	$800 or more
2.	[ ]	$10,000 - $14,999	"	$750 - $799
3.	[ ]	$15,000 - $19,999	"	$700 - $749
4.	[ ]	$20,000 - $24,999	"	$650 - $699
5.	[ ]	$25,000 - $29,999	"	$600 - $649
6.	[ ]	$30,000 - $34,999	"	$550 - $599
7.	[ ]	$35,000 - $39,999	"	$450 - $549
8.	[ ]	$40,000 - $49,999	"	$350 - $449
9.	[ ]	$50,000 or more	"	Less than $350/month

42. A larger apartment is more expensive than a smaller unit. Which is more important to you?

[ ] Keeping costs as low as possible.
[ ] Having as much space as possible.

43. Which of the following entry fee plans would you most prefer?

[ ] Low initial payment with no refund of payment when you move.
[ ] Middle amount of initial payment with partial refund of initial payment when you move.
[ ] High initial payment with complete refund upon move.