JAMES A. GRAASKAMP COLLECTION OF TEACHING MATERIALS

I. MANUSCRIPTS

B. Unpublished Books

3. First rewrite of <u>A Guide to Feasibility Analysis</u> by James A. Graaskamp: Was to be published by the Society of Real Estate Appraisers and includes draft of Chapters 1, 2, and 3

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GUIDE TO FEASIBILITY ANALYSIS

Second Edition

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PREFACE

It is significant that a banker, Laurance Rockefeller, has characterized a central theme of this Guide in a statement about work on environmental quality - "the task before us consists of learning to do what we have not yet successfully accomplished on any scale: the creation of communities that are socially open and environmentally sound." Bankers take as given the goal of financial balance and solvency.

Feasibility is concerned with project fit to the ethical goals of projects which are "socially open and environmentally sound." Feasibility analysis is essentially recognition of the ethical sensitivity of the project. Financial viability is concerned only whether the revenues appear to be adequate to cover the outlays, a financial condition which some writers try to dignify as economic feasibility, although externalized costs and postponed consequences are not factored into their financial simulation.

Once this distinction is recognized it is easy to understand why feasibility analysis is such a neglected, undeveloped ~~art form~~ decision tool. As a society we build anything we can finance because our investment banking industry, our mortgage banking industry, and our commercial banking industry are concerned only with product in the form of investment paper and a prospectus that alleges economic viability. Money is amoral.

It is no wonder that money will not pay for the real cost of feasibility analysis relative to social and environmental concerns unless feasibility analysis is ethical, it has to do with project relationships with other folks and land use ethics. Study of feasibility begins with a sketchy outline of the real estate process.

GUIDE TO FEASIBILITY ANALYSIS

CHAPTER I

BASIC CONCEPTS

Feasibility analysis is a generic term, like theft, which has covered a multitude of sins in recent years. Just as lawyers have found that they must distinguish among such creative efforts as embezzlement, burglary, robbery, and wrongful abstraction to save a client, real estate professionals will find careful definitions of market, merchandise, appraisal, and economic studies leads to better understanding of process and salvation for the client. For the appraiser, feasibility analysis is a basic philosophy of inquiry, the fundamental premise of appraisal, and a systematic recognition of the uncertainties in any forecasts of enterprise success. Identification of the most probable use of a real estate parcel is a prerequisite of predicting the most probable selling price. Perhaps of greater importance is the fact that the study of feasibility by the appraiser will convince the appraiser that his proper role is that of market analyst, capital budget planner and counselor.(1) Unless he provides a broad range of services and fulfills multiple objectives, the profession will fail to survive. The current use of fair market value as the only criterion for appraisal is converting appraisers to mortgage regulators, property inspectors, and courtroom soothsayers.

A theme of this monograph is to point out that feasibility analysis is the essence of real estate counseling. This chapter presents key defintions of the real estate process and describes the basic elements of comprehensive feasibility analysis.

A. Basic Definitions

Real estate is a multidimensional product defined as artificially delineated space with a fourth dimension in time, where the space-time unit maintains a fixed point of reference in relation to the face of the earth. Survey monuments and other structural improvements define the cubage; the legal system of contracts and court precedents define time. These space-time abstractions are always intended to enclose some kind of social purpose or to house some type of activity that is defined by social priorities, institutional controls, and the laws of physics. These uses give names to the space-time product, which the trade speaks of as a motel room/night, apartment/month, square foot of office space/year, tennis court/hours, or time-shared ownership of a resort condominium/week.

A real estate project is a combination of a space-time unit and some activity or enterprise, an ensemble of artifact and service. In a cash economy any real estate project is a cash cycle enterprise requiring management services to match space-time requirements and resources with the needs of a specific user. Money is the energy transfer system between enterprises, such as a household, a retailer, or manufacturer, and those experts who manage the inventory of real estate product for the social system. The real estate business is therefore any enterprise that provides expertise that will assist in relating space-time needs to money-time limitations. Such expertise includes architects, real estate brokers, city planners, mortgage bankers, builders, and all manner of related services. The true profit centers in the real estate business are in the sales of supplies, services, and the rental of cash capital, a reality that is often obscured by the buying and selling of brick and mortar. In fact the physical transaction only reflects the acceptance of a soft and intangible set of assumptions regarding the future by the buyer and the seller's evaluations of needs, cash flows, and the fit of the real estate to their respective assumptions.

The real estate process is the dynamic interaction of three distinct enterprise systems within society. There are space users (consumers), space developers and managers (producers), and various off-site services such as roads, sewers, police, and schools (infrastructures). (See Exhibit I-1.) Each of these major systems can be further subdivided. The consumer group consists of individuals requiring specific real estate transactions in the marketplace, of collective groups of individuals who can express their requirements through the political system, and of a third group of consumers who must be represented by proxy, specifically the generations yet to come. The space producers may be public or private enterprises that provide capital, skills, and materials. The infrastructure enterprises may also be public or private utilities, services, or security. Some relate directly to a specific site (e.g., a sewer lateral); others are regional in character (e.g., a health plan or library service). Despite their diversity, each element in these three broad decision groups represents an organized undertaking, an enterprise constrained by the need to be cash solvent to survive. It is important to recognize that survival of the enterprise is the first objective, followed by service, growth, and surplus or profit in its cash balances. Within the real estate process, a desirable real estate project can be recognized and defined when (1) it meets the need of the consumer at a cash price that he can afford, (2) it does minimum damage to the survival instincts of the collective consumer or proxies for the future generations, and (3) it permits the producer group and the infrastructure group to maintain solvency, that is, a cash break-even level of operations after full payment for services, expertise, and the rental of capital. <u>Solvency of the total process, not value, is the critical concern of land use and real estate investment debate</u>. Before relating this view of the real estate process to systematic feasibility analysis, we must define "land."

<u>Land</u> is the bearing point upon which the real estate product and the enterprises in the real estate process come to rest, because it is where demand and supply forces find cash solvency, that is, equilibrium among multiple goals and conflicting objectives. The physical attributes of that land affect the cash demand and supply costs of each aspect of the project, but it is not a profit center in itself. Land provides access to a real estate project opportunity that is a captive market for real estate services; to control land is to control and divert the revenues and expenditures for services necessary to blend artifact and service in a real estate project. In the final abstract sense, the degree of ownership in land can be measured by the degree to which a decision maker can divert cash flow and equivalent satisfaction to his own benefit. The property manager with 5 percent of collective rents might be more of an owner than those who hold the title and are faced with meeting deficits, and both who are in possession of the building or the title might be less of an owner than the community, which is collecting 20 percent of gross rents in real estate taxes.

B. Evolving Definition of "Highest and Best Use"

Recognition of the various parties of interest in the real estate process has only recently led to a redefinition of the most basic concept in real estate analysis and appraisal, the concept of highest and best use. Note the shift from value and profit maximization, as revealed by the 1971 definition, to recognition of community impact in the 1975 explanation. Both definitions are from an authorized terminology handbook for appraisers.

In 1971 "highest and best use" was defined as:

> 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.(2)

In 1975 it was restated as:

> 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 development goals in addition to wealth maximization of individual property owners. [Emphasis added.] Also implied is that the determination of highest and best use results from the appraiser's judgement and analytical skill, i.e., that the use 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.(3)

The implication of the 1975 definition is that even an appraisal requires identification of alternative uses that are reasonable in light of site linkages and other attributes, together with a ranking of alternative uses according to market demand (appropriately supported) and a final test that indicates that the project is financially feasible. Thus, even an appraisal is a form of feasibility analysis, differing only in terms of the questions that are being asked and the profile assumed for the investor.(4)

While the definition has improved, the term "highest and best use" is still objectionable because it is identified with an era of laissez-faire land economics, a concept that whoever can pay the highest price for a particular site is the appropriate user of that site. The phrase lacks content - "highest" in terms of what and "best" for whom? Better sensitivity to both the public interest in land-use decisions and the methods of enterprise decision-making argue for an effort to replace this moribund expression with two contemporary terms and concepts:

> MOST APPROPRIATE [FITTING] USE: A planning and zoning concept applicable to that use of land which: (1) will promote the greatest good for the greatest number; (2) is in the best interests of the community as a whole. It may or may not be the highest and best use. Likewise, it may or may not be a present use or it may be a future use.(5)

> MOST PROBABLE USE: The most fitting use modified by political factors, the state of real estate technology, or the pressure of cash-flow limitations on the consumer, the property owner, or interested public agencies.(6)

The "most fitting use" is the optimal allocation of resources, the normative standard which is the concern of economics. "Most probable use" is the business standard of the possible given an imperfect system. The process of compromise between "most fitting use" and alternatives that result in "most probable use" is the subject matter of feasibility analysis. This relationship will be expanded in later discussions concerning enterprise systems.

C. Systematic Decision Making

The basis for any decision is the assembly of facts with which to define alternative courses of action and to forecast the various outcomes that might result from each alternative. It is then necessary to measure the desirability and probability of achieving the alternative outcomes. (See Exhibit I-2.) Even a well known football coach commented that he was reluctant to use the forward pass because two of the three alternative outcomes are bad. Even though one might be reasonably well-informed on alternative courses of action, he must find a means for measuring the probability of success for any given enterprise. Since a real estate project is both an artifact and a service enterprise, it is practical to explore measurement techniques used in both physical design and enterprise management.

Great similarities exist between the broad concerns of feasibility analysis and the process of physical design, and the would-be analyst is urged to read Notes on the Synthesis of Form by Christopher Alexander (Cambridge, Mass.: Harvard University Press, 1966). The real estate analyst is testing the marketing, legal, financial, and social dimensions of a real estate project as these factors relate to site and physical design. The client who is putting together a design package, solving a land-use problem, or making a real estate decision has control over only certain variables in his situation. He can give form to these variables, but this form must be compatible with the context of all factors that he cannot change and that place demands on the solution or form that he selects. The designer speaks of the "fitness" of a solution to the context in which it must operate, and the basic object is to find a solution that is ideally frictionless. Context defines the problem, and form-giving is the proposed solution; feasibility analysis is concerned with identifying and measuring the decisive elements of fit between the two. Indeed, the feasibility analysis of most projects is primarily a search for a possible material and potentially defeating misfit. A misfit represents a source of dissatisfaction, a failure to achieve certain objectives, or a nonrecognition of changing conditions. Depending on the assumptions related to the misfit attribute, it represents a primary indicator of feasibility. The process of achieving a good fit of a real estate project to the context in which its investors and the physical real estate must operate is often a negative process of neutralizing the incongruities, the irritants, or unpredictable forces in context that could cause unsatisfactory outcomes for the space user or the space owner.

This abstract thought that feasibility implies satisfaction of objectives and a freedom from the financial irritations of certain types of incongruities or misfits in a proposed course of action can be reinforced by a few actual situations:

Example 1

An office project for 300,000 square feet was a misfit in a market absorbing 150,000 square feet of space per year until it was redesigned into four low-rise 75,000 square foot units forming an office park, thus balancing existing space inventory with a reasonable capture rate of forecasted demand.

Example 2

A small shopping center would produce storm water runoff in excess of the available capacity of the community storm water system until on-site storage capacity was designed into parking lot grading and dry-well storage.

Example 3

Rezoning of a site for apartments would be opposed by neighbors until survey research showed that design could eliminate their fears that a dead-end street would become a through street for traffic and that the neighbors' views of apartment parking could be neutralized by an earth berm planted with evergreens.

Notice that the degree of fit between the form of a project and its context might involve quantitative tests for scale, legal size limits, and financial ratios, or it might involve measures of satisfaction with aesthetic and subjective judgments. The art of feasibility analysis includes the problem of selection and application of relevant tests of "fitness for use intended".

<u>An enterprise</u> is any organized undertaking, and a real estate problem or project always begins from the viewpoint of some enterprise relative to its environment. Indeed, the <u>systems engineer</u> 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. The systems engineer uses "power of the environment" as a dynamic alternative to the static implications of context and adds the dynamic element of behavior to the elective responses of the form giver.(7)

Whether one prefers the more static implications of context and form or the dynamic interactive implications of "power of the environment and of the organization," it is clear that measurement of successful outcomes first depends on how well choices of action can be defined and tested for fit or consensus with context and environment. A major element to feasibility is correctly defining the question and perspective to be studied. Indeed, once the right questions are asked, the answers are often obvious.

D. Definition of Feasibility Analysis

The basic thrust of all feasibility analysis for a given project is the simple question, "Will it work?" and if so, "For whom?" and "Under what assumptions and conditions?" The more formal statement of that could be:

> 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. This definition of feasibility contains a number of significant concepts:

1. Because the objectives of every client are unique, the major function of a feasibility analyst is to seek a correct statement of the problem in order to evaluate the fit of a proposed solution to that problem. These objectives are not only peculiar to the client, but they are often irrational in the narrow economic sense of "highest and best use," which states that maximizing returns is the rational overriding objective.

2. "Likelihood" implies the explicit recognition that predicting results involves the use of many variables about which subjective judgments must be made. Even when the real estate community is not ready for the more sophisticated concepts of probability, an average real estate practitioner is usually able to sense that a horse is a nag without being a qualified odds-maker for the racing sheet.

3. The concept of "satisfying" must be organized to deal both with intangible requirements of social planning and real estate "amenities" and with the more tangible decision points of financial ratios and dollar profits.

4. Identification of the "context of special constraints" requires research of limitations not only in zoning or soils or structural layout but in the ethics of land use, the politics, and the preferred transaction styles of consumers who might rule out certain courses of action. Specification of political-legal or marketing requirements is analogous to modern design methods referred to as the functional attributes required of an adequate solution.

5. "Limited resources" is a broadly defined concept that includes not only money and material but also the intangibles of enterprise talent, goodwill with consumers and regulators, time available for a solution, and positioning in the given market where the resources could be used for acceptable alternative courses of action.

<u>The Terminology Handbook</u> has unfortuntely added a line to

the original definition of feasibility provided in the 1970 monograph.(8) The handbook stated that "feasibility of a real estate project is normally related to its probable economic potential." Economic potential means that the present value of anticipated benefits exceeds the capital cost for a specific party to acquire if, as, and when the project is completed. Lenders relate loans to this asset value in the classic loan-to-value ratio, which is presumed to measure safety of the investment. Improper identification of asset value and liability management with feasibility has meant disastrous misunderstanding by lenders and regulators during the last decade. Feasibility requires that all parties to the project have a reasonable probability of remaining financially viable (cash solvent) throughout the timeline of the development process, while "economically justified" depends only on the present value of selected benefits to a specific party, and is conditional on the completion and survival of the party at interest as a financial enterprise. Chapter VIII will develop additional criteria such as cash break-even ratios, cash escrows, and maximum potential loss ratios as bases for evaluating investment security.

The recent trend toward public and private consortiums is a response to the fact that the combined economic benefits to private and public interests might justify the development, but the project cannot be financially viable to the private sector or the public sector alone because of interest cost and political risk to the private sector or the absence of entrepreneurial resources in the public sector. Some projects with economic potential can be made financially viable and therefore feasible only by the careful matching of public participation and the proper goals and risks of each enterprise in the real estate environment. Alternatively, developers could build empty buildings where there is no liability on the mortgage and the project is financially viable for them even though the ultimate economic potential would mean losses to others. Therefore, feasibility requires that cash resources are adequate to provide solvency (financial viability) and that probable economic value upon completion justifies the capital costs of all enterprises (public and private) that are parties at risk to the investment. The tendency of our lending institutions to confuse financial viability of their commitment or the investors to relate feasibility to their exposure to loss with the true meaning of full feasibility has led to charges that the real estate industry is irresponsible in the allocation of resources.(9) Recognition of the real estate process as pivoting on cash solvency for all parties with a vested interest is critical to understanding feasibility as a basis for a much needed ethic for justification of real estate decisions. Certainly, the ethic must include environmental quality as well as financial viability, but the limit on the pursuit of quality is solvency.

E. Systematic Problem Solving and Feasibility Reports

The management of any enterprise or system follows a series of functional steps and feedback loops on the way to a decision. These steps might be described as follows:

1. Management must recognize organizational values and goals. "Conserve shoreland to protect the environment" and "to make money is good" are moralistic judgements that must be converted to operational objectives. The objectives derived from these value judgments might be that the public should own 25 percent of all shorelands and wetlands or that the enterprise investment should make a 10 percent profit.

2. To selected among courses of action in pursuit of these objectives, management must provide policies, definitions, or criteria that will rank and screen out those courses of action less likely to produce the desired objective without unacceptable side effects.

3. Given an initial selection process, management must search for opportunities for action that are consistent with objectives and criteria.

4. Because more than one opportunity exists, management must select one to the exclusion of most others, and that selection process must be consistent with goals and objectives.

5. Given an opportunity target or selected course of action, management must design a system, program, or plan that can best capture the selected opportunity.

6. Management must then execute, install, or implement the system or plan for capturing the selected opportunity.

7. Once in place, the program or project that has been installed must be operated for some time to accomplish

the desired result.

8. The enterprise can monitor the operating system in order to gather information that can maintain and improve each of the preceding steps and lead to an altered course of action.

These generalized steps to enterprise management can be converted to the language of real estate as in Exhibit I-2. It should be noted that feasibility is concerned with each of these management steps except for actual development and management of the project. These functional steps in the management process permit correct names for the various reports that have been erroneously described as feasibility studies in the past. Indeed, the analyst would do well to correctly name the study that he is providing the client in order to delineate the special area of its concern. The range and variety of issues in a total feasibility analysis are seldom done at one time by a single individual, and therefore it is imperative to correctly name each component of a complete analysis. The subject matter and report types may be briefly outlined as follows:

1. <u>Strategy studies</u> deal with objectives of the enterprise for whom the feasibility study is performed:

   A. Strategic objectives and priorities
   B. Tactical alternatives acceptable to the enterprise
   C. Decision rules or policies to rank and select alternatives

2. <u>Market study reports</u> are intended to identify opportunity areas from aggregate data that are consistent with objectives:

A. Aggregate statistical data on population, employment, income, or retail sales
B. National economic and political factors affecting priorities, incentive, timing, etc.
C. Economic base studies, trade area delineation, or economic development forecast
D. Significant trends in public attitudes, mores, or economic innovations that create or delineate submarket opportunities

3. Merchandising studies relate to specific market segmentation techniques, including competitive property studies, consumer surveys, retail sales projection, and marketability of a specific property:

   A. Identification of micromarkets with unmet space needs
   B. Consumer profile analysis to determine motivation, numbers, product and mix, preference, and price ranges
   C. Estimation of capture rates as a ratio of total effective demand absorption levels
   D. Selection of advertising and merchandising techniques

4. Legal-political studies as well as political briefs define the legal-political constraints on any real estate solution:

   A. Regulatory constraints on the decision maker
   B. Regulatory constraints on site and space development
   C. Regulatory controls on space-users and managers
   D. Regulatory constraints on those who supply capital
   E. Political forces influencing administration of discretionary regulations

5. Impact studies or compatibility studies are really concerned with the ethical limitations of a project as it relates to those collective consumers and governmental agencies to be affected by the project:

   A. Environmental impact on the physical qualities of land
   B. Project impact on the general plans and fiscal budgets of affected governmental units
   C. Project obligations to future space-users

D. Project influence on prime contractor-subcontractor relationships
E. Project relationship to priorities and self-image of the decision-maker

6. The physical planners provide <u>engineering studies</u>, <u>land suitability reports</u>, and <u>architectural schematics</u> in response to specific design problems and physical-technical constraints:

   A. Design schematic in response to merchandising target profiles or space-user requirements
   B. Site-use allocations and building envelopes given physical and legal attributes of site
   C. Functional and structural analysis of existing properties
   D. Style and design options relative to linkage and dynamic attributes of a specific property
   E. Space inventory relative to specific activities to be housed

7. Financial analysis of selected courses of action or financial constraints on acceptable solutions can be found in reports called <u>economic feasibility study</u>, <u>sensitivity study</u>, <u>appraisal</u>, <u>cash-flow forecasting and valuation</u>, or <u>income tax impact analysis</u>. All of these require assumptions:

   A. Specification of selected profit centers
   B. Definition of time-line for the enterprise forecast
   C. Capital budget estimate and schedule of outlays
   D. Pattern of operating revenues and outlays
   E. Financial plan for source and application of funds
   F. Tax strategy
   G. Form of business organization and funding
   H. Selected indices of risk and yield

F. <u>Feasibility Report Viewpoint and Assumptions</u>

Every feasibility study must have a specific viewpoint because the question of "Will it work?" begs the response, "For whom?" Not only does analysis require a specific development concept on a particular site, but in addition, it requires the viewpoint of a decision maker before it is possible to measure success in terms of goal satisfaction. Profitability and feasibility of a subsidized rental project has one measure for the HUD analyst and quite another measure for the project developer. The appraiser is handicapped in the recognition of differing viewpoints because the basic definition of fair market value presumes the classical definition of a rational economic man, operating in a market of perfect competition to maximize economic surplus where all costs have been suitably internalized to the venture. Somehow that model of economic enterprise does not match the real world of real estate. Everything possible is done to create site and product differentiation, suppress information for efficient markets, externalize cost on others, stimulte irrational buyer behavior, or sacrifice the pursuit of profit in favor of business stability and survival. Free enterprise is the art of creating your own monopoly to avoid competitive pricing, of juggling cash flow to maintain solvency, and of shifting risk to others by contract or by position well out of proportion to profit relinquished accordingly. The windfalls and wipeouts of bargaining advantage or of the unforeseen rely on a viewpoint regarding who benefits and who pays.

The level of abstraction of the viewpoint and the detail of who benefits and who pays can also serve to classify studies that have a variety of names and produce a confusion of terms in the real estate industry. The chart in Exhibit I-4, suggested by Anthony Downs, provides an explicit identification of viewpoint assumed, the level of detail or disaggregation of supply and demand analysis, and the source of decision making objectives and criteria.(10) For example, "highest and best use" studies presume that someone, not necessarily the owner, will be motivated to use the property to its most value-productive purpose while land-use studies attempt to maximize the aims of a specific client rather than the economic system. The more remote or abstract the viewpoint, the more likely that a report can be classified as an economic study. This guidebook prefers to emphasize the microeconomic aspects of consumer analysis and investor-motivation viewpoints.

Thus land-use, market, and cost-benefit studies abstract to a larger frame of reference than feasibility analysis or appraisal, specifically a planning viewpoint, a community segment, or society as a whole. It is our opinion that a real difference exists between a purely social viewpoint and a planning viewpoint, even though the planner represents and regulates the investor and space-user to protect the interest of society as he sees it. The planner is concerned with the pragmatic politics of accommodating and compromising the self-interest of investor-developers, space users, and social ideals. For example, true conservation is concerned with the protection of the resource at the expense of the short-term interest of the resource-user, while the planner must originate and implement partial controls on supply that are politically possible and that lie between economic investment and consumer demand in the abstract and finite limitations of the land. The distance between viewpoints suggested by the triangular illustration in the notes to Exhibit I-1 is forever shifting.

G. A Team Approach to Real Estate Analysis

The historical role of the appraiser as a generalist capable of all aspects of property analysis or at least not culpable if specific issues were ignored by declarations in the limiting conditions is no longer valid. To ignore engineering or legal consraints is to be unable to answer the question "Will it work?" While a generalist may do a preliminary feasibility study, largely by postulating a set of assumptions under which the project might work, validation of each assumption may be required by a specialist before conclusions are sufficiently reliable for investment action. Like the architect, the appraiser is finding it difficult but necessary to merge his professional concerns with a variety of specialties and options that focus on real estate problems, including the various engineering specialties, the ecologists and sociologists, the industrial systems people, the planners, and the money managers.

The duty of the private or public real estate entrepreneur is to direct the inquiries made by a committee or by professionals who specialize in the techniques of city building and land use. Although the appraiser is in the preferred position of chairing this talented committee, he must be able to ask the right questions, recognize and challenge the implicit assumptions, and perceive the financial implications inherent in the expertise of others. The appraiser is no longer expected to be an encyclopedia of answers; neither does he have license to assume away the critical questions needed for feasibility analysis. Eventually, he must synthesize all of the technical contributions of the team into an economic forecast in order to justify the financing from which all else is possible. Feasibility study has become a process of collaboration rather than the prerogative of a single profession. The anonymity of committee judgments, however, nurture the bias in the self-interest of the analyst and in the loss of each committee member's personal ethical commitment.

FOOTNOTES FOR CHAPTER I

1 Richard U. Ratcliff, "What Is the Role of the Professional Appraiser as a Real Estate Analyst and Consultant?" The Real Estate Appraiser 35 (September-October, 1969), pp. 23-27.

2 Society of Real Estate Appraisers, Inc., Real Estate Appraisal Principles and Terminology, 2nd ed. (Kingsport, Tenn.: Kingsport Press, 1971), p. 107.

3 Byrl N. Boyce, ed., Real Estate Appraisal Terminology (Cambridge, Mass.: Ballinger Publishing Company, 1975), p. 107.

4 See John E. Bohling, "Highest and Best Use: A New Definition, a New Opportunity," The Real Estate Appraiser 42 (January-February 1976), pp. 33-37 passim.

5 See Boyce, ed., p. 145.

6 Recurring lectures by James A. Graaskamp.

7 For a concise statement on the evolution of management theory from which this paragraph is abstracted, see John A. Beckett, Management Dynamics: The New Synthesis (New York: McGraw-Hill, 1971)

8 James A. Graaskamp, A Guide to Feasibility Analysis (Chicago: Society of Real Estate Appraisers, 1970), p. 4.

9 Sherwood Stockwell, "Letters a Lender Never Finished Reading," Urban Land 35 (November 1976), pp. 3-5.

10 Anthony Downs, "Characteristics of Various Economic Studies," The Appraisal Journal 34 (July 1966), pp. 329-38.

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CHAPTER II

APPROACHES TO PROBLEM SOLVING

Unlike appraisal reports where the objective is to estimate a clearly defined value, the feasibility study often appears to have no firm objective, no recognizable starting point, and no express outline of steps to follow leading to a conclusion. However, the analyst will discover that three basic problem formats--a risk management, creative use of analogy, and a systematic approach to counseling the client--will quickly reduce the problem to manageable proportions. This chapter will be concerned with problem formats in general, risk management, and analogy; the next chapter will provide some guidelines for client relationships.

A. Recognition of the Problem Format

There are only three basic real estate situations that generate a need for feasibility research:

1. A site or building in search of a user, or
2. A user in search of a site and certain improvements, or
3. An investor looking for a means of involvement in (1) or (2).

Each of these situations leads to a step-by-step analytical process that can be either flow-charted or written out in detail. (See Exhibit II-1.) However, it will take skillful interviewing of the client to convert the problem as originally perceived by the client to the proper problem definition recognized by the analyst. Clients are conditioned to ask certain questions of an appraiser, of a lawyer, of an architect or of an engineer and therefore, the initial inquiry can be distorted by implicit assumptions about what information is needed, what the appraiser does, and what the report should be titled. Chapter III will introduce further development of understanding the problem as presented by the client. Although some authors(1) see no difference between the investor problem and the problem of a site or user in search of a match, the experienced practitioner knows that the productivity of real estate first depends on the development of a productive use because, before there is a reasonable use, investors will not be willing to supply the needed backing. Investment value is derivative of use, and the selection criteria of investors and users will often be at significant variance to a point where there are no willing third-party investors in special-use property.

B. <u>Analytical Format for Site in Search of a Use</u>

"Site in search of a use" is a cryptic recognition of the fact that a real estate enterprise begins with some form of revenue or benefit flowing to a user in exchange for cash. The fundamental question is, "Who needs it?" "It" must be defined both physically and economically. First, it is necessary to inventory site attributes in order to hypothesize some alternative uses. The profile of site attributes should be subdivided into seven areas of concern:

1. Physical site attributes (static) include site dimensions, soils, geology, topography, site improvements and capacity, and on-site flora and fauna. (See Exhibit II-2.)

2. Legal-political site attributes include not only zoning and subdividing codes at the local level but also relevant federal, state, or private controls which might direct or restrict site use. As appropriate, the appraiser should note administrative bias patterns relevant to application of law to use of subject site. (See Exhibit II-4.)

3. Physical structural improvement attributes must integrate physical description with building code requirements, energy budgets, and characteristics of structural subsystems including foundation, bearing structure, exterior wall system, interior wall system, horizontal and vertical circulation system, HVAC systems, and security systems. (See Exhibit II-3.)

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. (See Exhibit II-5.)

5. Linkage attributes identify relationships of site to networks, populations or activities centers that might generate potential demand for the subject property. (See Exhibit II-6.)

6. Economic attributes of site and structure combined relate to alternative rentable spaces, operating expenses, real estate taxes, special assessments, and potential capital outlays required to achieve code conformity, occupancy permit, or marketability. (See Exhibit II-7.)

7. Environmental attributes of the site concern off-site natural systems of which the subject property may be a part such as reparian rights, pollution downwind, 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. (See Exhibit II-8.)

A profile of site attributes is a basic skill of the appraiser and will not be expansively treated here, although a suggestive checklist for each set of attributes has been provided in Exhibits II-2 to II-8. The sequence and context of these seven topics is the basis for contemporary appraisal.(2) In addition, some basic reference materials are provided at the end of the chapter. Recognition of several alternative uses will then permit research of potential demand and political acceptability of alternative courses of action. Evaluation of the alternatives can typically be summarized and communicated quickly with the aid of a matrix chart and the analyst can provide a final opinion as to the most probable use of the property. An example of such a matrix is in Exhibit II-7 and some useful tools for basic financial parameters will be provided in Chapter VII.

C. Analytical Format for a Use in Search of a Site

Although the real estate profession tends to purchase a site and then search for uses to enhance its value, the preferred and more consistent strategy is to carefully profile user requirements before selecting a site. A specific retailer, office park developer, or home builder seeking to serve unmet needs of a housing segment should be able to profile his priorities of site features and structural specifications. Often the user desires a specific set of linkages. The retailer wishes ties to other retailers, adequate parking, and travel routes to specific types of customers. The industrial plant may require linkages to real transit, labor pools with specifications, and so on. These criteria permit rapid elimination of alternatives which lack some of the desired site attributes. The user group may also have constraints on the maximum rent per unit or total dollar cost which further screens out alternatives. The feasibility analyst may be hard pressed to develop appropriate measures of fit to test alternative site strategies and choices.

Example 1

An industrial plant may be located by measuring cash return to total corporate investment at alternative sites. Such an approach would require a separate estimate of sales, manufacturing costs, administrative costs as well as a definition of the net capital employed after adjustment for local subsidies and building costs. On the other hand, a private firm may choose to relocate for the convenience of the owner in reaching his home or his boat or his favorite recreational area, all of which are rational criteria.

Example 2

A retailer may choose to pay high rent to be where the people are or to pay lower rent, avoid conjestion, and advertise heavily to pull the crowds to him. Identification of a user group with an anxiety, an irritating inconvenience, or an unrealized dream through careful research provides the opportunity to select a site with the highest probability of having monopoly characteristics relative to a targeted user group.

The old saw that real estate is a matter of three factors, "location, location, and location" ignores the fact that the power of location is its ability to serve the needs of a user group and that by profiling cȯnsumer requirements and patterns, the power of location can be created by manufacturing the critical site attributes.

Example 1

In Vancouver the land north of Howe Sound had a southern exposure, views, timber, everything for striking homes but a linkage to downtown. Construction of the Lions Gate Bridge by the developer provided a dramatic linkage and created a prime residential location, not to mention land value and toll revenues.

Example 2

Rezoning of an old estate in a prestigious single family area creates location attributes for a luxury apartment because it creates site attributes for those desiring prestige without home ownership.

Example 3

Location is created by the arrival of a Disneyworld which sought specific site charateristics or by an imaginative little restaurant in a backwater neighborhood. Each draws customers despite location if access is convenient and distance is relative to duration of stay. A two minute stop for milk must be very close to home while a week-long vacation from may justify a day's travel as convenient.

Location is not inherent in real estate properties but is perceived satisfaction among a user group so that all real estate actually begins with a user in search of a site.

D. <u>Investor in Search of Real Estate Opportunity</u>

While many users are investors in their own property requirements, many others approach real estate as simply an investment media and are relatively neutral to specific locations, uses, or improvements if streams of cash outlays and cash receipts are equally attractive. For this type of client, the feasibility analyst needs a definition of investment portfolio objectives and a profile of the business personality of the client. Just as it is necessary to profile the site for the user as a first step in the situations above, it is first necessary to profile the investment objectives and idiosyncrasies of the investor searching for a real estate adventure. The analyst must convert the profile to a set of methods and screens for ranking and selection of investments. First and foremost, these screens will suggest a search strategy that is consistent with the desire of the investor to accept or establish degrees of the following:

1. Exposure to the political process and administrative arrogance by means of:

    A. Public land use controls

    B. Political controls on prices or user effective demand

    C. Political constraints on peripheral operations

    D. Journalistic exploitation of latent community attitudes

2. Revenue locked in by means of:

    A. Direct control of ultimate user

B. Indirect control through reciprocity

C. Channeled demand because of terrain, utilities, or site linkages

D. Consumer research to establish market gaps

3. Level of management intensiveness required for continual marketing and management

A. Sale of finished units means less long term management than long term triple net lease

B. Long term, triple net leases are less demanding than multi tenant with escalators which in turn are less than gross residential leasing

C. Management spectrum of land development starts with passive land positioning, packaging, site development, construction and marketing, and long term management

1. Each requires less entrepreneurial foresight and innovation
2. Each requires more administrative execution of a plan
3. Each requires more intensive capital risk
4. Each is more sensitive to time delays.

4. Investment characteristics in terms of timing, and sources of return

A. Profit centers available from investors expertise or not available due to need to subcontract

B. Potential returns from income, refinancing surplus, income tax ploys, or capital gains on resale

C. Time horizon or length of time between outlays and receipts acceptable to investor

D. Alternative investments available to indicate opportunity cost of funds and reinvestment expectations for future profit

E. Customary investment measures of rate of return and degree of risk

5. Federal tax strategies appropriate to investor

    A. Short term viewpoint

    B. Long term viewpoint

6. Investment attributes for estate accumulation and distribution plans

    A. Form of ownership as it affects management continuity, flexibility and form of estate distribution

    B. Nature of estate transfer and estate tax funding plans

    C. Investment flexibility for liquidity and gifts

7. Required flexibility in structuring decision points

    A. Provision for contingent commitments or sequencing of capital outlays

    B. Policies relative to organization authority for approval

    C. Opportunity for risk management and purchase of financial hedges

To Literature Section

D. <u>Logic, Modeling, and Creative Thinking for Analysis</u>

The feasibility process for each of the three problem situations assumes rational and logical decision making. Decision making can be intuitive reasoning from past experience, statistical from scientific experimentation, or simulation by means of models. The objective is to provide a systematic approach to decision making under conditions of incomplete data and uncertainty about the future.

Intuitive decisions generally result from creative application of analogy and metaphor. Thinking by analogy as a discipline for both teaching and analysis has been developed by William J. J. Gordon and Tony Poze.(3) Synectics, a basic technique of intuitive logic which they have developed, is used to make the strange familiar and the familiar strange for perspective or simplification. If the analyst is familiar with methods for retail store trade area analysis, he may apply the same logic to his first experience with a campground or racquet court project. In Chapter I, it was suggested that real estate was a space-time unit in which empty voids manufactured from the geometric planes of land, walls, ceilings, and survey lines were the real economic product which housed activity. By converting from the familiar image of real estate and brick and mortar to the strange abstractions of space-time, the author hoped to provide perspective on the dynamics of real estate enterprise. Analogy and metaphor is a basic teaching tool of the secondary teacher, the effective writer, and the creative artist, but it is also a useful tool for the intelligent analyst. The mechanism for consciously developing our ability for intuitive reasoning and perspective emphasizes the use of personal analogy, direct analogy, symbolic analogy and fantasy:

1. Personal analogy would be to note one's own confusion or resentment as to finding where to enter a building, a shopping center parking lot, or an intersection and to assume others would behave and react in a similar fashion.

2. A direct analogy would be to compare the flow of traffic or pedestrians to the flow of fluids which could be pooled, diverted, or naturally _______ downhill or ______ to the side of the current, following the path of least resistance, such as a car crossing the potential dam on an intersection before turning into the resting pond of a filling station. Similarly, shoppers resist moving upward in a center unless pumped to the top with exciting elevators and then allowed to flow down the spiral as in the Frank Lloyd Wright Museum of Modern Art in New York.

3. Symbolic analogy may be found in a building shape or in a name or a mathematical model. A weekend resort called The Abbey immediately suggests architectural forms, sound control, dedicated service to the traveler, and a retreat from the hassles of everyday experience.

4. Fantasy analogy might relate retail store design to stage settings for merchandise or restaurants to theaters in which the patrons play the role of gourmet, socialite, romantic adventurer, or gracious and generous host. Gordon suggests that to increase the distance and perspective of the analogy it is useful to relate behavioral problems to mechanical things, such as pedestrian flow to conduits and fluids, and conversely to convert mechanical problems to behavioral counterparts such as store design to theatrical effects.

Model building is a method of reasoning by analogy. Models are replicas of the real world which are intended to permit the editing of data by means of theory and hypothesis to focus on a question. For models to be effective, it is critical to have the right question to which the data can relate. There are three general model types: physical models, abstract models and symbolic models, and all of these are the essential tools of feasibility analysis:

1. Physical models are sand tables of topography,

architectural models of form and mass, or full scale room layouts to test unique environmental designs. Such models are important to analyze as well as communicate facts about siting, massing, sun and shadow, micro-climate, and compatibility with the immediate neighborhood.

2. Abstract models are graphic layouts such as flow charts of production processes, pedestrian and vehicle traffic flows, or critical path network diagrams, all of which have great value in visualizing a problem and communicating complex dynamic relationships. Even a written report and a table of contents is an abstract model of the thought process.

3. Symbolic models use computer logic (if, then statements, for example) and algebraic statements of relationships (such as cash rent-operating expenses + real estate taxes + interest + principal payments, divided by cash break-even point desired).

Models are primarily useful when they prove to be good predictors, but models have additional advantages for feasibility analysis:

1. A model provides a preliminary frame of reference for analysis, and failure of a model to tie together as a logical system or to predict may reveal information gaps not apparent at first.

2. Another advantage of model making brings into the open the problem of abstraction. An apple has an infinite number of attributes or properties in regard to size, shape, color, and chemical composition. In deciding to eat it or not, only a few characteristics are considered - worm holes, color, texture, and height above ground on the bough. Some degrees of abstraction are necessary for decision.

3. Once the problem is expressed in symbolic language, one may simplify it by the manipulation of mathematics or verbalize a concise statement of the problem.

4. Models often provide the cheapest way to accomplish prediction as well as the fastest. The gross rent multiplier is a model of investor reaction to a stream

of rent dollars, a cheap and sometimes accurate decision tool even though its simplicity contains opportunity for error in application.

5. Models are subject to the usual dangers of abstraction, false premises, translation in scale, or infatuation of the model builder with his brainchild rather than reality. Criticism must always be directed toward the assumptions required by the model to be useful for a specific purpose.

A model is a hypothesis which depends on a constant interplay between available data and theoretical insights which provide the basis for the hypothesis. It does not cost much to think up a number of clever models about a problem; millions are spent in medical research to collect data to prove or disprove a common sense proposition that cigarette smoking is bad for the lungs. So it is in appraisal; most of the cost and debate is in the collection of information in sufficient amount and quantity to fit the model of what an appraisal should be. So it is in feasibility analysis; but unlike conventional appraisal formats, the analyst must also provide the model. Teaching feasibility analysis is a matter of teaching creative modeling techniques which can be adapted to the great variety of questions in counseling and feasibility analysis. The models must be useful, have the confidence and understanding of the client, and be operational within the client's budget. There would seem to be a professional obligation for the analyst to know what type of decision and forecasting techniques were available so that he might best serve his client with the current state of the art for management of the enterprise. However, the use of modern management methods for real estate problems is most often restrained by the reluctance of real estate practitioners to learn quantitative methods and by the resulting hesitancy of the client to pay $100 for a $5 answer.

The first model or logic system to be reviewed among many in this text is a model of a decision problem as a general statement. Decision theory has become a major subject of business management at the college level in the last decade because decision making is the central coordinating concepot of any enterprise and the method by which the management process previously described is implemented.(4) It is interesting to note that decision theory textbooks are available for undergraduate courses in the management of the individual farm enterprise, but there are none specifically applied to management of the individual urban real estate enterprise. A summary of a decision model is provided in Exhibit II-9 and the general theory is illustrated by comparison to the typical best use problem with which all appraisers are familiar. Of course, the assumptions in the general model about future conditions and financial expectations are not certain; the decision machine must deal in verbal, subjective, or statistical probabilities and the enterprise must anticipate and provide a tolerance for surprise. The feasibility analyst must be prepared to qualify his conclusions by evaluating the reliability of his assumptions. Decision theory under conditions of uncertainty automatically leads the analyst into identification of fallback positions and risk management issues. The monetary loss due to acts of God may be mitigated by insurance and other uncontrollable conditions such as labor trouble may be shifted by contract clauses. Dynamic risks are those contingencies or events which could result in a profit or a loss such as gambling, drilling for oil, or business ventures. To some degree profit or loss dynamic risks are a function of the information, skill, and motivation of the manager. These types of risks are best controlled by expertise and personnel motivation from the possible pain of loss or the gains of success.

Once risk is recognized as inherent in a set of assumptions, it is also manageable. The objective of risk management is first to conserve life and existing net worth while a secondary objective of lower priority is to realize future expectations for income and the quality of life. To this end the functions of risk management would include:

1. Identification of significant exposures to loss.
2. Estimation of potential loss frequency and severity.
3. Identification of alternative methods to avoid loss.
4. Selection of a risk management method.
5. Monitoring execution of risk management plan.

The loss potential of any single contingency must be examined in terms of three elements: the direct loss of capital, the consequential loss of income or opportunity as a result of the direct loss, and the extra expense loss of additional management or third party liability claims occasioned by the direct loss.

Example 1

Loss due to fire in an apartment building causes direct damage to the building, consequential loss of rental income until units are repaired and rented, and the extra expenses of supervising repair and meeting third party claims for property loss (due to negligence related to the fire origins and to disaster management).

Example 2

A mortgage foreclosure on an office building which fails for lack of marketing may result in a direct loss of capital, loss of interest on capital tied down by the commitment, and the extra expenses of managing a workout and litigation.

Example 3

Selection of the wrong retail site may mean loss of working capital for the store owner, loss of income opportunities represented by other sites, and extra expenses of advertising and management necessary to correct the initial site selection error.

The risk manager has any number of methods available to reduce the frequency and severity of financial surprises inherent in any real estate enterprise. These techniques are well known to most people but are often not recognized as a systematic discipline for both policy, feasibility, and operating decisions. The basic methods are:

1. Avoiding undesirable risks (For example, some investors

fear price controls on rental housing and therefore will not invest in multi-family rental projects. Others may not accept the risk of vacancy losses and therefore develop no speculative buildings or do not provide surplus rental space in buildings primarily for their own use.)

2. Improve the predictability of capital and operating budgets to reduce variance (For example, specific expenditures for research substitute for expenditures of unknown time and amount in the future. Ownership of 100 units reduces variance in revenue due to vacancy when compared to 4 units where a single vacancy means a 25 percent drop in revenue.)

3. Reducing frequency of loss (For example, fireproof construction and control of tenant businesses may reduce frequency of fire just as underwriting selection of borrowers should reduce frequency of mortgage default.)

4. Reducing severity of loss (For example, a sprinkler system doesn't prevent fires from occuring but does reduce the damage; a low loan-to-value mortgage ratio may reduce severity of loss to the lender while an exculpatory clause in the mortgage could reduce the severity of loss for the borrower.)

5. Shifting the risk of future variance by contract (For example, a tax escalator clause in the lease shifts future surprises in the real estate tax to the tenant while a fixed price subcontract may avoid the threat of rising prices for a short period of time.)

6. Limiting of unknown liability exposure (For example, the corporate form of organization or a properly managed limited partnership establishes the maximum potential loss for the investor as the amount of his subscription.)

7. Hedging mechanisms also appear in real estate though seldom as an organized market for futures. (For example, a mortgage with an exculpatory clause is a straddle position which gives the borrower the right to a call on the appreciation on the property net of the mortgage balance or to a put to the lender if the future of the property is bleak.)

8. Creating compensation incentives for performance (For example, a graduated commission based on total sales, level of occupancy, or adherence to a budget as well as equity participation and options for the management are common methods of motivating management toward the same objectives as the more passive investor.

A number of risk measurement techniques will be discussed in Chapter VII relative to financial analysis, but the numbers vary only as the assumptions about non-quantitative matters may vary.

Example 1

The mortgage loan closing process is a risk management validation of the assumptions which made it feasible to make the loan. The assumption of marketable title is validated with title insurance, location of improvements validated by bonded surveyor, continued existence of the improvements as collateral is offset with property insurance, and the consequences of foreclosure from unstable economic conditions are offset with public or private mortgage insurance. The generalist made the loan while the specialist validated the assumptions, just as in feasibility the enterprise should not be under way until assumptions by the generalist have been validated and the consequences of error allocated to those who can afford the risk.

Example 2

Private college dormitories depend on college administrative rules that students live in supervised housing. If the rule is removed or students are required to live on campus by administrative fiat, what then?

Example 3

Real Estate investors seldom realize the degree to which they assume the status quo in world conditions. A recent financial forecast about the availability of mortgage funds made the following explicit assumptions, in fact statement of limiting conditions:

"Assuming no renewal of Middle East hostilities and a resulting oil embargo."

"Assuming a reduction of the inflation rate to 5 percent through effective federal government fiscal and monetary programs."

"Assuming only moderate increases for construction labor contracts in the summer of 1977."

Perhaps, the fundamental objective in risk management for feasibility analysis problems is to dig for the implicit assumption made by the client and test the validity of that once it is brought to the surface. Perhaps the client has assumed the soils can support the structure or that all his tenants will arrive from the subway station in the basement or that all single person, elderly households will accept an efficiency apartment to avoid the expense of renting a one bedroom apartment.(5) The most critical factors in feasibility are often taken for granted when they are assumptions which have not been challenged or validated. The feasibility analyst is paid for identifying the critical assumptions and methods for validation. As a generalist he is expected to ask the right questions, serve as an expert on experts, and be self appointed as the risk management director for a proposed course of action.

Almost any real estate project contains within it so much uncertainty as to its future success, that the conservative analyst is strongly tempted to arrive at a negative conclusion as to whether the prognosis justifies a statement that the project is feasible. Risk management techniques give him some latitude in predicting some success and satisfaction or conditioning a generally positive statement with certain limitations. However, the feasibility analyst often finds himself in the position like that of an attorney for J. P. Morgan who was told in no uncertain terms, "Don't tell me what I cannot do; you are paid to tell me HOW to do what I want to do!" Thus the feasibility assignment begins with a need to specify the values and objectives of his client and the scope of duties assigned to the analyst.

FOOTNOTES - CHAPTER II

1 Stephen D. Messner, et. al., Analyzing Real Estate Opportunities, Market and Feasibility Studies, Realtors National Marketing Institute, (Chicago, Ill., 1977), p. 16.

2 James A. Graaskamp, The Appraisal of 25 N. Pinckney: A Demonstration Case for Contemporary Appraisal Methods, (Madison, Wis.: Landmark Research, Inc., 1978)

3 For programmed literature and learning materials, direct all inquiries to Synectics Educations Systems, 121 Brattle St., Cambridge, Mass. 02138, (617) 868-5747.

4 For a recent book on decision systems written by an appraiser for appraisers, see: Gene Dilmore, Real Estate Counseling, (Lexington, Mass., Lexington Books, 1978). For a more advanced introduction to Urban Systems techniques see: Jay W. Forrester, Principles of Systems, (Cambridge, Mass., Wright-Allen Press, Inc., 1976).

5 Each of these examples are actual cases of project failure attributable to the erroneous assumptions which could have been easily tested.

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CHAPTER III

DEFINITION OF CLIENT OBJECTIVES AND REPORT CONTENT

Since feasibility analysis by definition requires specification of specific goals, limited resources, and viewpoint, it is critical to understand the client viewpoint, his limitations and resources, and his problem. This obvious task is complicated by the fact that the problem as originally perceived by the client is seldom the real issue deserving analysis. Moreover, the personalities in the decision process may be a major aspect of the problem, with wildcatters trusting instinct rather than decision systems and with field mice doubting the validity of their own experience. Compounding perception and personality is the fact that the prospective client has often been pushed into the office of the feasibility consultant by a skeptical lender, a cynical SEC, or a spectre of malfeasance liability. Despite this emotional undercurrent the client and consultant need to arrive at an understanding. Unlike the architects who contract for services on a standard AIA form which promises nothing specific in the way of product from the architect other than a monthly billing and denial of liability, feasibility analysts are a lonely and isolated group operating from one client to the next on improvisation as to product and contract for services. Clients seek out consultants when they are distraught and feasibility analysts, like divorce lawyers, generally arrive on the scene at a difficult time. Still there is great need for the parties to evaluate one another and to specify what is expected of each and what fees will be paid for services rendered.

A. The Problem Perceived by the Client

The problem which prompts a client to seek a feasibility study of one sort or another may not be presented correctly at the initial meeting. First the client is conditioned to expect that appraisers do appraisals and that value in the market is always the central issue in real estate. Moreover, most everyone considers themselves an expert on real estate since they've lived in it all their lives and that conditioning leads to implicit assumptions. The architect will presume that the appraiser can comment only on financial aspects out of respect for the architect's responsbility for design and the factory owner does not expect the analyst to challenge his desire to purchase a piece of property with doubts and suggestions as to alternatives which could avoid the difficulties of ownership. The consultant must begin his definition of the real problem by attempting to discover what is taken for granted by all parties concerned and that search will continue to shape his inquiry and his communication with his client. Invariably, the client has selected a preferred course of action without a thorough identification of alternatives and a statement of measure of "fitness" to his objectives.

In the initial meeting the consultant may wish to quietly interview his client by exploring a numer of topics of conversation with him. To understand the reasons behind the requests of the client for an appraisal of market study, ask about his objectives from involvement in real estate. This simple question may reveal significant naivety and lack of previous definition of objectives. His objectives may be only the repetition of conventional wisdom or a statement of loosely structured hopes and expectations, a wish list, as in the case of some statements on public land policy or increased production of low cost housing. On the other hand, the client may have tightly programmed goals for tax shelter, cash returns, or a construction schedule requiring completion in 65 working days on a new site yet to be selected. For redefinition of objectives, the analyst might then refer to the relevant set of topics illustrated in Exhibits II-2 through II-8.

To better understand his client in terms of his limitations, resources, as well as his objectives, it may be useful to direct the interview by asking explicitly some of the following questions, for which actual examples and responses have been provided:

[CHIEF: This was all you gave us from Chapter III.]

Exhibits I-1 + I-2
not found in this file

EXHIBIT I-2

GENERAL THEORY OF THE MANAGEMENT PROCESS CONVERTED TO REAL ESTATE FUNCTIONAL SEMANTICS

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
Operational program	Property management
Monitoring and feedback	Real estate research

Source: John A. Beckett, Management Dynamics: The New Synthesis (New York: McGraw-Hill, 1971). Interpretation by James A. Graaskamp.

EXHIBIT I-4

CLASSIFICATION OF REAL ESTATE STUDIES BY VIEWPOINT AND PREMISES

	NATURE OF VIEW-POINT ASSUMED (1)	LEVEL OF DEMAND SUPPLY ANALYSIS (2)	USE OF PRE-EX-ISTING DEVELOP-MENT CONCEPT	FOCUS ON SPECIFIC PARCEL OF PROPERTY	DECISION MAKER VALUES, OBJEC-TIVES, & CRITERIA	ESTIMATION OF VALUE	CALCULATION OF RATE OF RETURN ON EQUITY INVESTMENT	CONSIDERS NON-FINANCIAL FACTORS	PROGRAMMATIC CONTENT AND RECOMMENDATION	CALCULATION OF ABSORPTION RATE	ECONOMIC PRE-MISE OF HIGHEST AND BEST USE
FEASIBILITY STUDY	Specific Client	3-4	Yes	Yes	Client Determined	NR (3)	Yes	Yes	Yes	Yes	NR
APPRAISAL	Class of Investor	2-5	Yes	Yes	Presumed	Yes	NR	NR	No	NR	Yes
REUSE APPRAISAL	Class of Developer	2-5	Yes	Yes	Presumed	Yes	No	No	Yes	Yes	Yes
HIGHEST & BEST USE STUDY	Class of Investor	2-5	No	Yes	Presumed	NR	Yes	No	NR	No	Yes
LAND UTILIZATION OR STRATEGY STUDY	Specific Client	3-5	NR	NR	Client Determined	No	No	No	NR	No	No
LAND USE STUDY	Community as a Whole	1-6	No	No	Previously Specified	No	No	Yes	No	NR	NA
MARKET STUDY	Class of Investor	2-5	No	No	Presumed	No	No	No	No	No	NA
MARKETABILITY STUDY	Specific Client	2-3	Yes	Yes	Client Determined	No	No	Yes	Yes	Yes	NR
COST-BENEFIT STUDY	Community Segments	1-6-7	Yes	NR	Previously Specified	Yes	No	Yes	No	Yes	NR
COMPATIBILITY STUDY	Community Segments	NA (4)	Yes	Yes	Observer Standards	No	No	Yes	Yes	NR	NR
ECONOMIC BASE STUDY	Community as a Whole	6-7	NA	No	NA	No	NA	Yes	No	No	NA

EXHIBIT II-1

Site Known/Use To Be Determined

Site study (physical & legal)	Preliminary alternative uses	Match to linkages and dynamics
Market analysis to quantify demand & price	Quantify supply & cost	Trade area delineation
Probability of market capture at acceptable margin	Preliminary feasibility of most probable use	Refine use analysis and select best use

Use Known/Site To Be Determined

User functional and amenity requirements	User rent and capital budget limits	Specification of search area and site priorities
Market analysis of demand and supply	Define trade area	Site alternatives identified
Estimate capture rate and sales volume	Estimate direct and indirect cost	Relate net income for alternative sites
Select site	Refine preliminary search and feasibility assumptions	Select site with best ratio of revenue to capital

EXHIBIT II-2

PHYSICAL SITE ATTRIBUTE ANALYSIS TOPICS

1. Size, shape, and lot area
2. Topography, soils, geology, slope stability, bearing capacity, SCS suitability, potential for subsidance, etc.
3. Water table, wells, streams, ponds, storm water swales, shoreland edges, and bulkhead lines, floodplain 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

EXHIBIT II-3

PHYSICAL STRUCTURE ATTRIBUTE ANALYSIS TOPICS

1. Computation of square footage and cubage to establish building code jurisdiction level.

2. Definition of structural system, bay spaces, ceiling heights, etc.

3. Delineation of foundation system, structural system, exterior wall system, interior wall system and vertical circulation system.

4. Delineation and analysis of HVAC system (including BTU budget)

5. Accessibility to the handicapped if regulated, to delivery, to customer parking, to fuel delivery points, to solid waste pickup points

6. Penalties for fire insurance rating system, floodplains, sprinklers, etc.

7. Non-conforming features which create renovation or remodeling problems

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

EXHIBIT II - 4

LEGAL ATTRIBUTES OF SITE AND STRUCTURE

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 administration of the law.

8. Existing or impending legislation relative to such matters as: septic tank installation, water quality for ground water, water recharge area, storm runoff, salt water encroachment, etc., air quality standards relative to use, HVAC performance, micro-climate interference, conservation of environmental edges, of prime agricultural land and of wetlands.

EXHIBIT II-5

DYNAMIC SITE ATTRIBUTE ANALYSIS TOPICS

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

EXHIBIT II-6

SITE LINKAGE ATTRIBUTES ANALYSIS TOPICS

(Logic of analysis moves best from the borders of the subject property outward to expanding zones of potential users or competitive supply)

1. 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.

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

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

4. 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. Complementary existing nearby uses
    e. Recreational services
    f. Health care systems
    g. Security systems
    h. Waste disposal services

5. Relationship of site to neighborhood demographics (population, age, employment, income, etc.)

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

Exhibits II-7 + II-8 not found!

EXHIBIT II-9

GENERAL MODEL OF DECISION THEORY
APPLIED TO MOST PROBABLE USE PROBLEM

General Model	Real Estate Application
1. Alternative actions that can be taken	a. Do nothing b. Demolition of existing structure for parking lot c. Demolition of existing structure for replacement with new building d. Renovation of first floor retail only e. Renovation of first floor retail and upper floor office f. Renovation of first floor retail and upper floor apartments.
2. Response of external environment	a. Rejection of use by land use regulators b. Political acceptance and strong acceptance by potential users c. Political acceptance and weak acceptance by potential users d. Political acceptance and no demand from potential users
3. The consequences in terms of gains, losses and utility benefit of each combination of action and state of environment (state-act pair)	a. Table or matrix of dollar gain or loss or residual value to parcel owner or prospective buyer

4. Experiments or estimates for determining more about the state of the environment or context	a. Possible surveys of prospective tenants or political regulators b. Estimating a relationship between demand levels and other factors in terms of verbal or statistical probabilities c. Derivation of further information by analogy to comparable projects or experience
5. Available strategies for the decision maker which relate alternative courses of action to the probabilities of various states of environment which may be experienced	a. The matrix of alternative outcomes will probably reveal that certain sets of actions and outcomes are dominant so that many theoretical alternatives will be ruled out. Only those that remain need to be detailed
6. The consequences of each remaining strategy for expected environmental condition must be detailed in a format which is relevant to the criteria of choice reflecting values and objectives of the decision maker	a. Financial projections and ratios b. Profit centers for decision makers c. Tolerance for risk measurement

7.	Choice criteria can take quantitative or qualitative measurements	a.	The conversion of the old building to retail office use may produce the highest net income, the lowest cash breakeven point, the lowest construction cost and the best cash on cash return after taxes with the least risk of rent control, and of conflict with building code requirements of for window space and fire safety