JAMES A. GRAASKAMP COLLECTION OF TEACHING MATERIALS

VII. INDUSTRY EDUCATIONAL COURSES - LONG TERM

B. Urban Land Institute (ULI) Summer Courses

4. "Real Estate Development Analysis with Microcomputers", and "The Real Estate Process", Summer 1987: Includes course outlines, handbook, and correspondence

Index

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URBAN LAND INSTITUTE

NATIONAL SCHOOL FOR REAL ESTATE DEVELOPMENT
OUTLINE AND TIME TABLE

Course II - - Real Estate Development Analysis
With Microcomputers

SUNDAY AFTERNOON 3 - 6 p.m. (Anikeeff, Graaskamp, Robbins, and teaching assistant)

I. Introduction

A. Faculty

B. Students

C. Materials

II. Comments on National School for Real Estate Development

A. Origins

B. Future curriculum plans

C. Philosophy of blending academic structure and ULI member experience

D. Arrangements to protect proprietary programs used in the course

1. Specify software included in tuition of course
2. Specify protected software

E. Objectives of the course in terms of take home tools, analytical concepts, preparation to anticipate the future

F. The development process is implementation of physical plans which reflect design solutions to information processing problems

III. Course will assume the student has the following skill level but will review IBM-PC operational procedures Sunday afternoon:

A. Basic equipment description of capacity and options in the lab

B. DOS level of understanding

Boot system
FORMAT disk
COPY files
Assign drives
Load Languages
LIST directory of disk files

C. Language level

1. BASIC
   Start BASIC
   Load program file
   Run program
   List program
   Save program
   Return to DOS

2. Lotus 123
   Start 123
   Load spreadsheet
   Run spreadsheet
   Move within spreadsheet
   Exit spreadsheet and return to DOS

MONDAY MORNING

I. Definition of key alternative perspectives to building development problems

A. Three basic problems (Graaskamp - lecture)

1. Site and improvements in search of a market (front door approach)
2. Use in search of a specific site and structure elements (back door approach)
3. Investment in search of real estate as an earning repository of funds (portfolio approach)

B. Moving from space envelope to capital budget to required rental structure (students use MOD-1 of Canestaro Refine program) (Robbins - lab)

C. Moving from effective demand options to rent available for controlling land and buildings to justified total capital investment (Graaskamp - lecture)

D. Student use of MR. GIB applied to Canestaro program output (Robbins - lab)

II. Real estate development financial simulation models require:

A. Basic elements of financial model (Graaskamp - lecture)

1. A time line for the forecast
2. A perspective as to which profit centers are to be capitalized
3. A revenue generating model over time
4. An outlay generating model over time
5. A capital financing model
6. A real estate tax and federal income tax model
7. Ratio analysis to indicate type and scale of risk
8. Alternative measures of profitability relative to risk

B. The decision process (Graaskamp - lecture)

1. Simulation of alternative courses of action and alternative outcomes
2. Ranking of alternative outcomes for desirability
3. Ranking of alternative outcomes for uncertainty
4. Systematically selecting a course of action based on a matrix of desirability/uncertainty

C. Demonstration of financial modeling and the decision process using ATV (Robbins - lab)

1. Basic imputs and assumptions
2. Opportunities to derive inputs from ATV from subsidiary spreadsheet model
3. Defining goals for use of computer output
4. Hands-on utilization of ATV
5. Critiquing content of output and format

MONDAY AFTERNOON

I. Shifting emphasis to analysis rather than simulation (Graaskamp - lecture)

A. Ratio analysis

B. Graphic analysis

C. Sensitivity analysis

D. Density modeling

E. Response mathematics to measure cumulative sensitivities

II. The need to provide financial simulations which reflect risk management control of project (Graaskamp - lecture)

A. Allocation of investment value to alternative assumptions sets

B. Selection of pivotal risk management cushions

1. Solvency ratios
2. Equity reserves and debt reserves
3. Control of time variance--CPM
4. Control of budget variance--PERT
5. Satisfying risk ratios before improving profit ratio

III. Hands-on operating of MR. CAP (Robbins - lab)

A. Use of case study preloaded on MR CAP for ratio analysis

B. Testing consequences of purchase price vs. retail price

C. Testing consequences of early completion vs. delayed completion

D. Testing consequences of alternative sequences for funding deficits from earnings, sinking funds, capital funds, and working capital

IV. Conclude afternoon with a comparison of model formats, assumptions, analytical content, and simplicity of communication

MONDAY NIGHT (Robbins and teaching assistants)

Computer lab open from 7 - 9:30 p.m.

TUESDAY MORNING (Robbins - lab)

I. Introduction to spreadsheet thinking and implementation

A. Historical development of spreadsheet procedures and programs (Ellwood and simple mortgage interest, new program)

B. Lotus 1,2,3

1. Stand alone spreadsheets
2. Information synthesis spreadsheets to generate data for other models
3. Spreadsheets as tabular information display

C. Introduction to the basics (mortgage amortization program)

D. Solving a basic Lotus 1,2,3 problem

II. Developing a lease abstracting model using 1,2,3

A. Development of a lease roll model with Lotus 1,2,3 to fit MR CAP of ATV or VALTEST

TUESDAY AFTERNOON (Robbins - lab)

I. Compare student 1,2,3 models with those prepared for MR CAP or ATV

A. Have student utilize a commercial template which presume ATV

B. Introduce students to a land development project

TUESDAY NIGHT (Lab open from 7 - 9:30 p.m.)

WEDNESDAY MORNING (Robbins - lab)

I. Definition of key marketing and merchandising objectives

A. Defining four types of market analysis

B. Disaggregation of aggregate data for profile of targeting real estate consumer

C. Graphic analysis of market opportunity areas in terms of absorption rate, primary trade area, or other demographic attributes

II. Giving students opportunity to use CACI statistical data or population data

III. Data to support revenue assumptions

A. Market scale and absorption

1. Customer profiling
Secondary data sources

CACI (Atlas map and mapedit)

2. Primary data sources

(Need survey research form, respondent data entered file, and opportunity for statistical cross-tabs using 1,2,3)

B. Commercial property tenant role data base

1. 1,2,3 presentation
2. Interfacing with existing financial model

WEDNESDAY AFTERNOON

I. Project management using HARVARD TOTAL PROJECT MANAGER II

A. CPM, PERT, and allocations defined

B. Resource leveling

C. Presentation quality report

WEDNESDAY NIGHT -- OPEN

THURSDAY MORNING

I. Graphic presentation of site data (RESMOD, air photo digitized example)

II. Demonstration of site plan layout, density, and pace of development

III. New methods of large scale data input from digitized maps

THURSDAY AFTERNOON

I. Land development modeling (Ehud Mouchly)

A. The Rahenkamp prototype

B. Ehud Mouchly - land model template

C. Community planning model

II. Architectural CAD models as a data base for facilities management (Doug Stoker)

A. Examples from Skidmore, Owens & Merrill

B. Hands-on use with graphic package

THURSDAY NIGHT -- OPEN

FRIDAY MORNING (Have left this open in case you want more time for Harvard Project Manager or statistical data analysis)

URBAN LAND INSTITUTE

NATIONAL SCHOOL FOR REAL ESTATE DEVELOPMENT
OUTLINE AND TIME TABLE

Course will assume following skill level:

DOS Level of Understanding

Boot System
FORMAT Disk
COPY Files
Assign Drives
Load Languages
LIST Directory of disk files

Language Level

1. BASIC
   Start BASIC
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   Run program
   List program
   Save Program
   Return to DOS

2. Lotus 123
   Start 123
   Load Spreadsheet
   Run Spreadsheet
   Move within Spreadsheet
   Exit Spreadsheet and return to DOS

Possible Texts:

1. Canestaro, James. Real Estate Financial Feasibility Analysis HANDBOOK. Chicago, Ill.: American Institute of Real Estate Appraisers, 1982.

2. Residential Development Handbook. Washington D.C.: Urban Land Institute, 1977.

3. Shopping Center Development Handbook. Washington D.C.: Urban Land Institute, 1977.

4. Graaskamp, James A., Fundamentals Of Real Estate Development. Washington D.C.: Urban Land Institute, 1980.

5. Cost Effective Site Planning. Washington D.C.: National Association of Home Builders, 1986.

6. Kaminsky, Jacob, How To Evaluate Development Proposals In Your Community.

BASIC FINANCIAL ANALYSIS

I. Components of Cash Flow Analysis

A. Revenue and Expense

Fixed Income
Variable Income
Vacancy and Bad Debt
Fixed Expense
Variable Expense
Real Estate taxes

B. Capital Cost Allocation

Land
Improvements

C. Debt Structuring

1. Principal Amount

Loan-to-value
Loan-to-cost

2. Repayment Schedule

Interest Only
Constant Payment
Participation
Balloon

3. Repayment Structure (Refinancing)

Loan-to-value
Default Ratio

D. Equity Structuring

1. Single Owner

2. Multiple Owners

Partnerships
Corporations
Pension Funds
Investment Trusts

II. Structure of Cash Flow Analysis

A. Project Analysis

1. Static FrontDoor/BackDoor

Loan-to-value Basis
Debt Cover Ratio Basis
Default Ratio Basis

2. Dynamic (Time Adjusted) FD/BD

Debt Amortization Value
Shifting Resale Price Value
Shifting Revenue Value

3. Minimum Yield Before Tax

Start-up Cost Accounting
Annual Cap Rate Stabilization

B. Equity Analysis

1. Techniques for Value Determination

Present Value
Net Present Value
Internal Rate of Return
Modified Internal Rate of Return
Financial Management Rate of Return

2. Type of Yield

Before Tax
After Tax
Without Sale
With Sale

III. Data To Support Cash Flow Components

A. Revenue and Expense

1. Customer Profiling

Secondary Data Sources

CACI (Atlas Map and MapEdit)

Primary Data Sources

(Need survey with conclusion)

2. Commercial Property Analysis

   Lease Analysis
   Tenant Analysis
   Property Analysis

3. Multi-Family Property Analysis

   Income categories
   Expense categories

4. Residential Property Analysis (Single Family)

   Income categories
   Expense Categories

5. Land Development Analysis (Raw Land Conversion)

   Income categories
   Expense categories

B. Capital Cost

Commercial Cost Analysis

   Marshal and Swift
   COMERMOD

Residential Cost Analysis

   RESID

C. Project Management Techniques

Harvard Total Project Manager II

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MEMORANDUM

TO: Michael A. Anikeeff

COPIES: Professor James A. Graaskamp
Professor Michael L. Robbins

FROM: Ehud G. Mouchly

SUBJECT: ULI Development School: Computer Applications

DATE: May 18, 1987

Enclosed are sample models for inclusion in the workbook.

These models will be part of our presentation and discussion on Thursday, June 18 and June 19. Mike Robbins will be forwarding a revised outline to you later this week.

If you have any questions, please let me know.

enclosures - NOT INCLUDED ON CD-FOLLOWING PAGE CURRENTLY BEING USED BY EHUD MOUCHLY IN SEMINARS AND IS DATED 5/30/97

EGM:ds

Back to Basics: The Three Reasons for a Real Estate Project

- **Site in Search of a Use**
  - To maximize land value
- **Use in Search of a Site:**
  - To maximize profit and minimize risk
- **Capital in Search of Return and Profit**

(Prof. James Graaskamp)

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Real Estate Development Analysis with Microcomputers

STUDENT'S MANUAL

ULI
REAL ESTATE
DEVELOPMENT
SCHOOL

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INTRODUCTION

This Student's Manual was designed specifically for the Urban Land Institute's (ULI) course, "Real Estate Development Analysis with Microcomputers." It has two primary purposes:

- To supplement and illustrate the lectures and labs.
- To support review after the course is completed.

The manual strictly follows the course outline, so you can follow the material section by section. The four parts roughly correspond to the first four days of the course:

1. General introduction to development analysis.
2. Introduction to spreadsheets and other models.
3. Market analysis and project management.
4. Site analysis and land development modeling.

Each page of the manual contains a "Notes" section, so you can take course notes directly on the page relating to the material being taught.

Much of this course is a "hands-on" computer laboratory. In addition to the text in this manual, you will receive disks containing many of the programs to be discussed in the class, sample problems, and other data. You will find these disks in "pockets" in the appropriate section of the manual. During the labs, the instructors will give you more information on the disk's contents and how to use them.

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PART 1: PRINCIPLES OF REAL ESTATE DEVELOPMENT ANALYSIS

INTRODUCTION

The basic theme of this course, Real Estate Development Analysis with Microcomputers, is risk management.

Definition

> Risk is the degree of error between assumptions about the future (changes in economy, values, personal and social habits, etc.) and what actually happens.

For example, when a developer approves a project based on the prediction that the property will sell for a given amount, he or she is taking the risk that upon completion the property will sell for less than that amount because of a variety of factors:

- Changes in market conditions.
- Changes in the economy.
- Overbuilding of that type of property.
- Social/political events, such as changes in property tax rates.

NOTES

A key element of risk is time. It is much easier to predict what will happen tomorrow than what will happen next year, so a long-term project is inherently more risky than a short- term (all other things being equal).

Because the element of risk cannot be eliminated, a primary objective in a negotiation is to shift as much of the risk as possible to another party through the risk management techniques listed on the following page.

NOTES

Risk Management Techniques

- Improving Forecasts, primarily through the statistical software packages demonstrated in this course.

- Combining Risks by pooling resources, diversifying investments, and improving forecasting through scale of operations.

- Shifting Risks by Insurance Contract to insure against major losses by fire, collapse, etc.

- Shifting the Risk by Two-party Contract. For example, the developer and contractor share the burden of rising materials costs.

- Limiting Liability for Losses through the Form of Ownership, such as forming a corporation to limit the developer's personal liability.

- Hedging, which covers a wide range of contractual contingencies to protect one of the parties. For example, a development agreement may be contingent upon the availability of a mortgage at a specified interest rate upon completion.

NOTES

The last five items are contractual, negotiated approaches to reducing the risk accepted by one or more of the parties in a venture. In and of themselves, however, they do not define or measure the risk in a given project. Only the first item --improving forecasts--meets this objective.

The party in a negotiation who has developed a detailed, reliable forecast of the risks involved in the project will be able to negotiate much more effectively (e.g., shift the risk to the other parties) than one who has not identified the risks.

The key to risk management, therefore, is to obtain and use information to increase the reliability of one's predictions; statistical analysis is the primary technique used to gain such information.

FEASIBILITY ANALYSIS

Definition

> A feasibility analysis is a formal study by a real estate consultant, developer, consumer, and/or public agency to predict the most likely economic result of a given transaction.

This course will describe the major types of analyses.

NOTES

The end result of an analysis will be in one or a combination of seven forms, depending on who requests the study, who performs it, and the study's purpose:

- Strategy Study: Selection of objectives, tactics, and decision criteria.
- Market Study: Review of the economic base or other related data.
- Merchandising Studies: Consumer surveys, competitive property analysis, marketability evaluation, etc.
- Legal Studies: Opinions on potential legal constraints, model contract or form of organization, and political briefs.
- Physical Design Studies: Engineering, land planning, and architectural studies.
- Compatibility Studies: An analysis of the project's impact on community planning, environmental quality, fiscal solvency, or other public policies.
- Financial Studies: Economic modeling, capital budgets, present value and discounted cash flow forecasts, rate of return analysis, financial packages.

The remainder of Part 1 will address the application of feasibility analysis to real estate development, and demonstrate some of the currently available tools developers and consultants can use to perform feasibility analyses.

NOTES

I. PERSPECTIVES OF BUILDING DEVELOPMENT PROBLEMS

A. Three Approaches to Feasibility Analysis

1. Front Door Approach (see figure on following page):

Purpose: Determining the best use for a given site.

Procedure: Calculate cost of development, then determine the type of use that would provide the greatest income level ("most fitting use"). Determine whether this income level would justify the cost of development. Major Variables:

- Physical Profile
- Building Structure and Orientation
- Budget and Financing Alternatives
- Workable Alternative Uses
- Consumer Profiles, Price Range, etc.
- Alternative Use Scenarios
- Preliminary Environmental, Political, and Fiscal Constraints.

Analysis of these items leads to the "financially solvent most fitting use," from which the analyst can predict the expected cash flow.

NOTES

2. **Back Door Approach** (see figure on following page):

Purpose: Finding the best available site for a given business venture.

Procedure: First determine the market value of the proposed property, then analyze construction costs to determine if the project will be profitable.

Major Variables:

- Determination of acceptable physical sites
- Linkages to markets, employees, supplies, etc.
- Anticipated customer/buyer resistance
- Anticipated revenues

NOTES

3. **Portfolio Approach** (see figure on following page):

Purpose: Finding the most promising investment (based on risk vs. return) for available funds.

Procedure: Based on the investor profile (objectives, requirements, legal constraints, tax law considerations, management approach, etc.), analyze development opportunities to determine which most closely meets the investor's objectives.

Major Variables:

- Legal Constraints (zoning, tax code, etc.)
- Form of Ownership
- Property Type
- Property Productivity Phase

This and other information is subjected to a solvency test that determines the likely after-tax cash flow and appreciation.

NOTES

B. Capital Budgeting

In this lab, students will set up and solve a capital budgeting problem through the following steps:

1. Define the "space envelope" (e.g., develop specifications for the project: size and number of buildings, nature and extent of site improvements, construction quality, etc.).

2. Estimate the cost of construction.

3. Determine the necessary income to ensure that the value per square foot will at least equal the cost per square foot.

This is an example of the Front Door Approach to marketing.

NOTES

C. Market Analysis

This lecture addresses the Back Door Approach to analysis: determining the expected income for given type of use by analyzing what the market is currently paying for comparable space. The sales (income) figure is derived from three variables:

- Size of market area
- Sales potential per block
- Capture rate per block

After these variables have been estimated, the developer adjusts the marketing strategy accordingly. For example:

- If the capture rate is too low, concentrate on competitive strategies to gain a larger share of the market

- If sales potential is too low, little can be done.

- If the area is too small, seek broader penetration.

In most cases, a combination of these and other strategies is most effective.

NOTES

THE REAL ESTATE PROCESS

James Graaskamp

Used as part of ULI presentations
National School for Real Estate Development

FIRST MODULE

THE NEW URBAN LAND ECONOMICS

Presented By

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

FIRST HOUR

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 and contribute some form of activity. Contribution is efficiency, security, comfort, or well-being.

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 a 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. An enterprise is an organized undertaking whose form and behavior at any point in time is a concensus or synthesis of forces outside the enterprise attempting to determine its form and behavior and focus within the organization which can affect form, behavior, and sustaining energy over time.

2. A real estate business is any business which provides expertise necessary to relate space-time need to money-time requirements and includes architects, brokers, city planners, mortgage bankers, and all other special skills.

3. The true profit centers in real estate are in the delivery of services and cash capital.

4. Equity ownership is the degree to which one enterprise controls or diverts cash from another real estate enterprise.

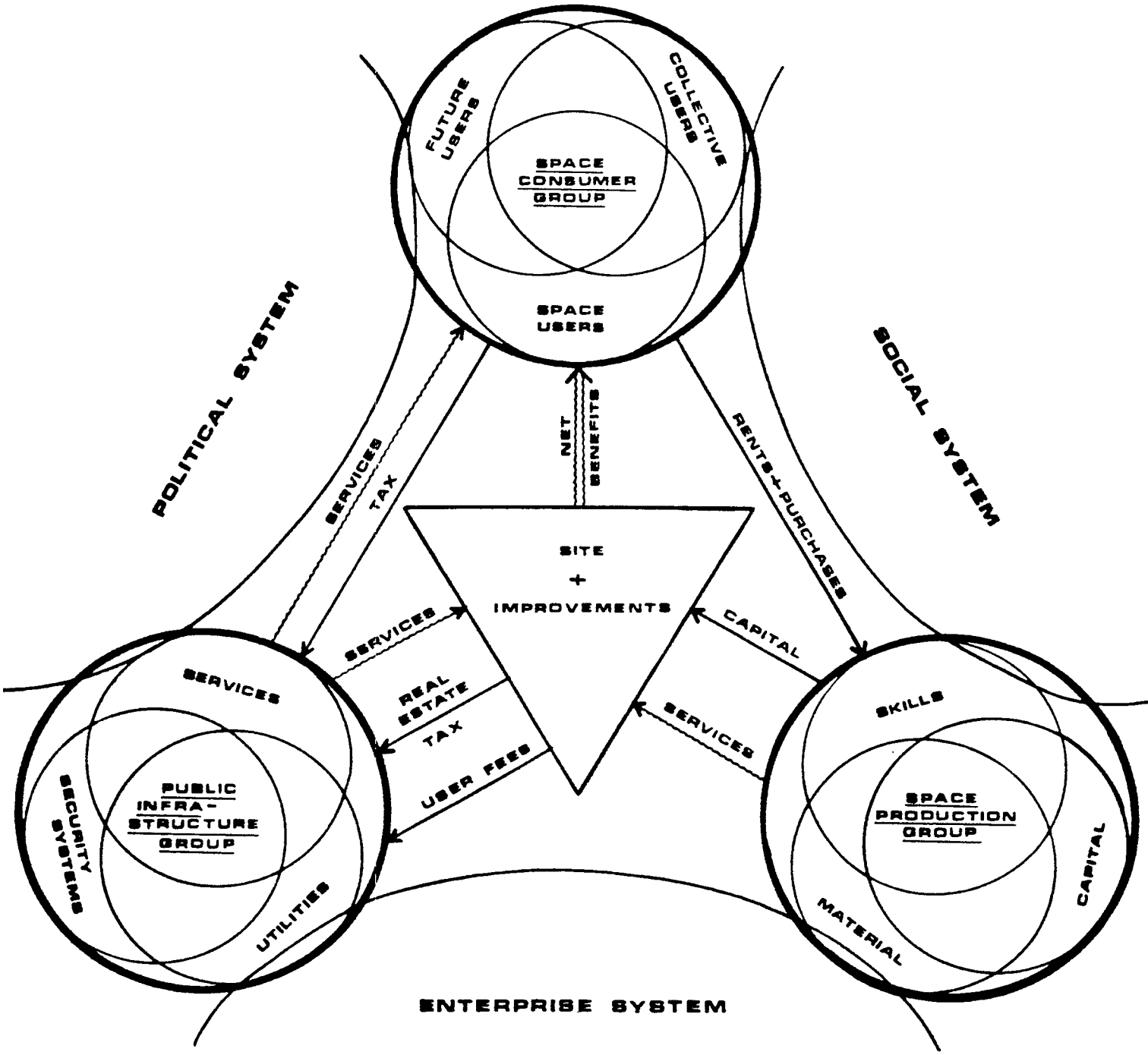
5. Public ownership exists to the degree real estate taxes, user fees, and other charges take a percentage of gross revenue in excess of service cost.

6. A consumer must view space as one part of a total consumption system involving direct cost, surface cost, transportation cost and negative income of risk.

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.

EXHIBIT 1



THE REAL ESTATE PROCESS

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 breakeven 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 cener.

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. The consumer group requires three levels of marketing sensitivity.

1. The collective consumer operating through the political process must be convinced that it should provide permits, zoning, or other approvals which franchise project.

2. The individual consumer who rents or buys must be convinced he will improve the activity housed in terms of convenience, efficiency, security, and well-being at a periodic cash cost which is affordable.

3. Future users consist of undefined future tenants representing a change in use which requires flexibility of site, structure, or services to maintain market edge, and therefore presumed resale liquidity.

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 Insitute 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 not 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

"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 appraiser's judgment 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.
Real Estate Appraisal Terminology, Edited by Byrl N. Boyce, Ph.D., SRPA, Ballinger Publishing Co., Cambridge, Mass., 1975. (Emphasis added.)

G. 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, and 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 selected conditions of certainty.

5. A feasibility study is a test of a particular proposal under alternative sets of assumptions about the future and its tolerance for variance or priority for certainty.

H. The concept of highest and best use of land was a commodity concept which did not consider externalities adequately. It is being replaced by 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 <u>most probable use</u> will be something less than the most fitting use depending upon 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. <u>Most probable use</u> 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.

I. 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 and 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.

5. Real estate is a collective decision and a product of the political process.

J. 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 objective and to which any solution must adapt.

   2. Form-giving elements are those variables within the artist's 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.

K. Ultimately there are only three major decision formats for real estate and land economics.

   1. A location (and related improvements) in search of a justified use.

   2. A justified use in search of the best fitting location (and related improvements).

   3. Money in search of an investment in location and related improvements--the conversion of space-time needs to money invested over time.

EXHIBIT 3

Analysis Process: In Search of a Use(s) For a Site

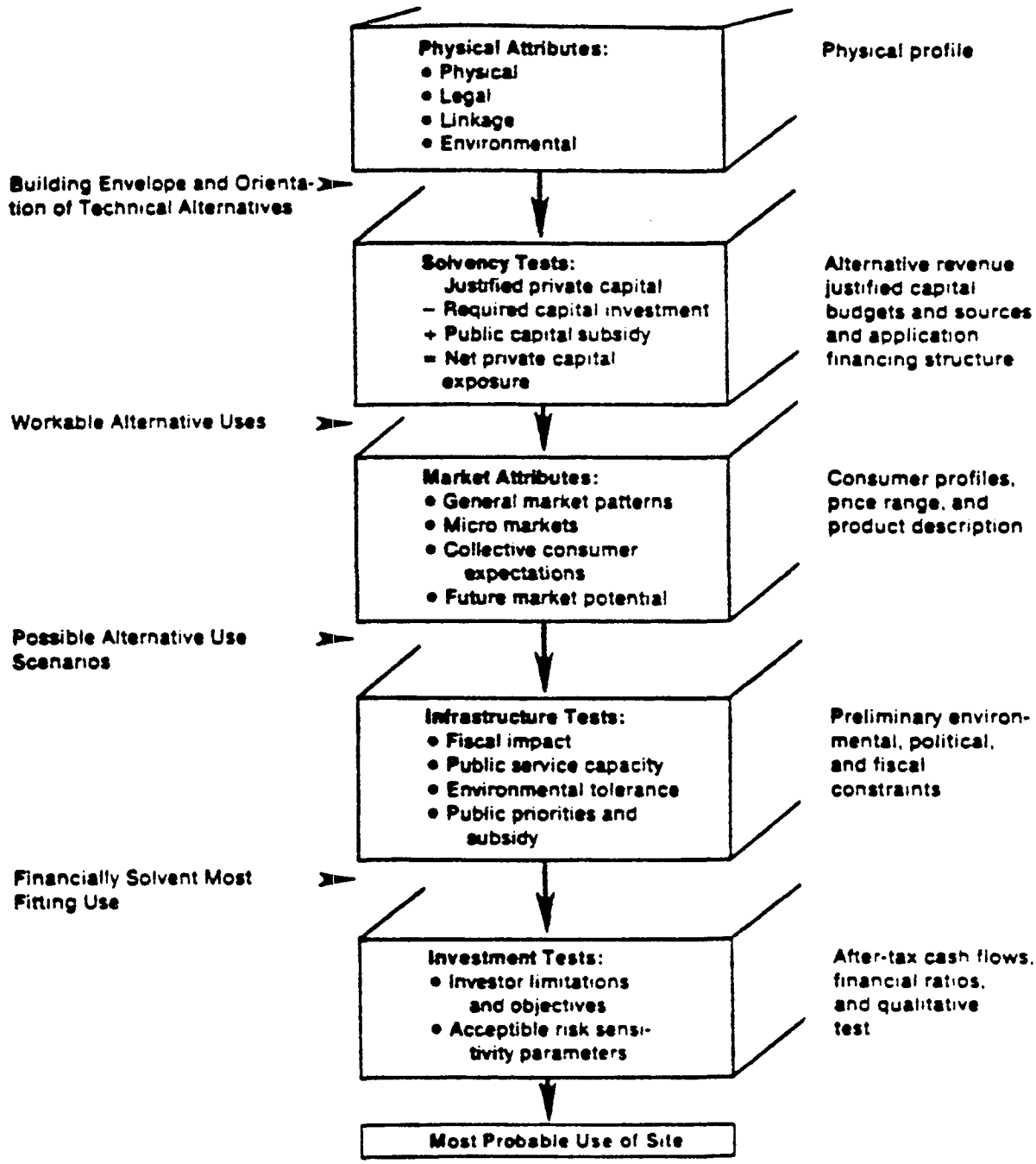


EXHIBIT 4

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

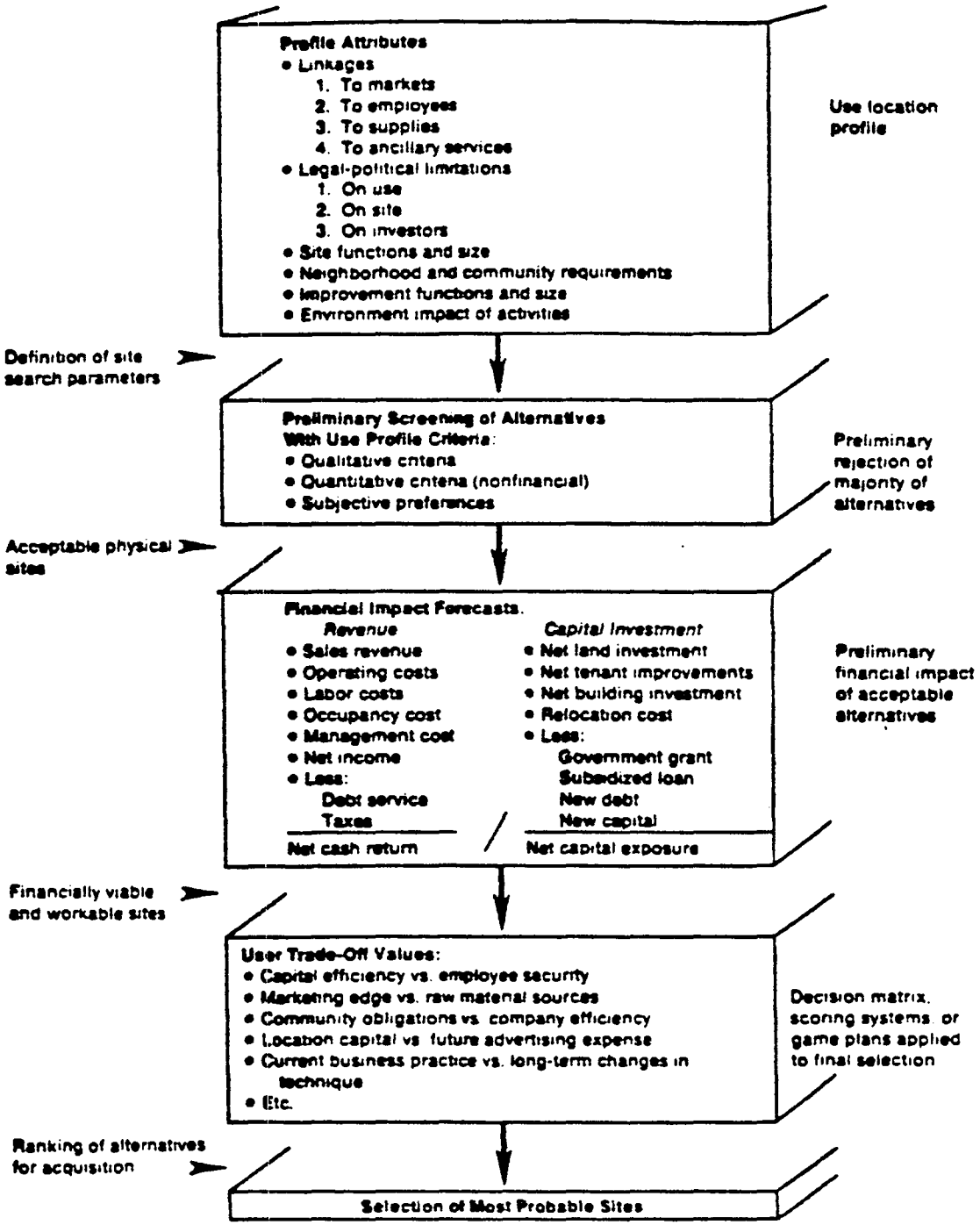
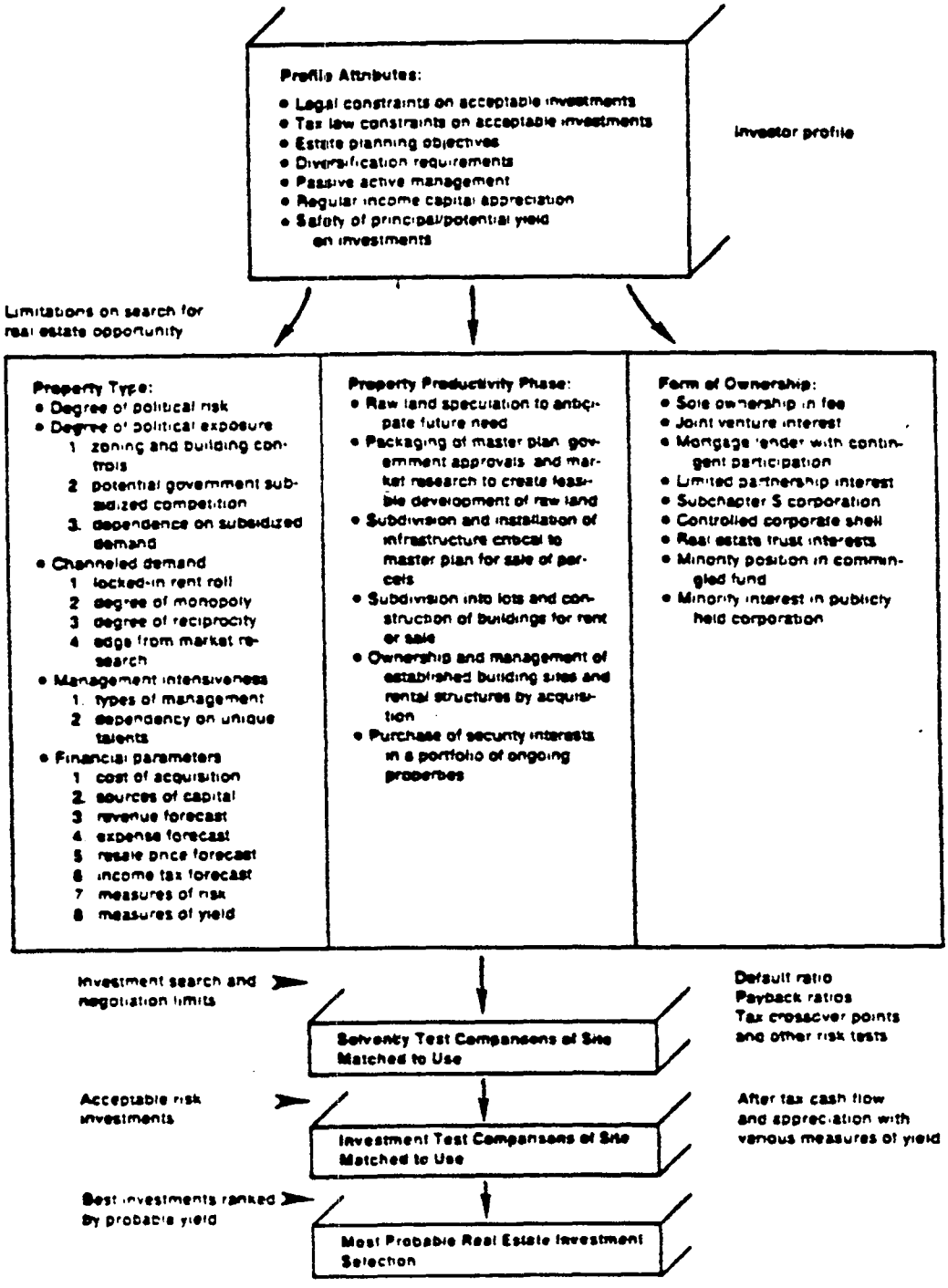


EXHIBIT 5

Process for Investor Selection of Real Estate



The School of Business
University of Wisconsin-Madison

Graduate School of Business
1155 Observatory Drive
Madison, WI 53706
608/262-0391

JAG's copy

January 19, 1987

TO: Michael Anikeeff
Ronald Barbieri
John Griffin
Dowell Myers
Michael Robbins
Rod Matthews

FROM: Professor James A. Graaskamp

RE: Real Estate Development Process, Course I, National School for Real Estate Development

1987 Summer Schedule

First offering will begin Sunday evening, June 7, 1987, and continue to Friday, Noon, June 12, 1987, at the InnTowner, 2424 University Avenue, Madison, WI 53705. Second offering will begin Sunday evening, June 28, 1987, and continues to Friday, Noon, July 3, 1987, at the Extension Conference Center, UW, 702 Langdon Street, Madison, WI 53706.

A new course on microcomputer tools for real estate analysis in under development and will be offered Sunday evening, June 15, 1987, till Friday, Noon, June 19, 1987, at the Microcomputer Lab of the UW Extension Conference Center, 702 Langdon Street, Madison. This course may be repeated in late August on the East coast or West coast at a university computer lab.

Course Development

The Real Estate Development Process course will be improved from the 1986 version by reflecting experience and changes desired by the 1986 faculty, suggestions from Michael Anikeef, and improved notebook material presentations from educational consultants, Dr. David Rossiter, Alan Moller, and Serge Ogranovitch, provided by ULI.

First element for course refinement is a detailed outline 1.A1, a copy of which is enclosed with tentative areas of responsibility indicated. The instructor is to modify elements in the A or 1, 2, 3, category or provide further details in his area of expertise (or any other suggestion that he may wish on the outline). Please supply these details to Michael Anifeef at the ULI and Jim Graaskamp immediately.

The second item needed is a suggestion by each instructor as to a limited number of text materials which he wishes included in the bibliography for his section over and beyond relevant ULI materials.

Third, each instructor may suggest a specific reading item or items or case study materials that he wishes to include in the student notebook. These materials are needed almost immediately to provide time for development of a uniform, sexy course notebook which can continue to be used as a reference manual by the student.

Faculty Arrangements

This year Michael Anikeef will formalize a contract letter with each faculty member relative to expenses, course development time, and course presentation time. Since it is very demanding to expect each faculty member to travel to Madison twice in the month of June, please indicate to Michael your availability for one or both course offerings and suggest a substitute should your other commitments later prove to be in conflict with the course commitment. Summer 87 may be a good time to begin involving other ULI members and developing a cadre so that the Development Process Course can be offered at other locations in 1988.

Concepts Controlling Course Outline

The concept of development has been defined and extended from raw dirt to remodeling, management and enhancement. The outline shows more emphasis on definition as well as mechanics. More time is spent on finance and structuring and less on residental land planning, construction materials, and engineering. We have strengthened the concept that a faculty member should teach no more than a half day at a time and many of the case study modules would permit us to insert a ULI developer for a specific topic section if and when available. Such a guest would be provided the detailed outline on his/her module to control the content of his particular contribution. Each Roman numeral unit has been roughly allocated 35-40 minutes in time although this may vary slightly from topic to topic. Hopefully, in a month or so we will send you a graphic CPM chart of the development process, which we can use to visually tie each presentation into the process and which will provide some graphic structure to the subject matter. Ultimately slide materials and script should be duplicated to become a permanent part of the package available to ULI in repeating the course program at other times and places with other faculty.

Course evenings have not yet been allocated, other than Sunday night orientation. Students indicated desirability of a field trip to a development project, an opportunity for camparison of student experiences in an open ended discussion, or optional use of ULI or other video tapes. Since Madison has an interesting variety of restaurants, concerts, outdoor sports and after hours entertainment, students may want to be free to explore the city in late afternoon and evening. Course outline needs recommendations on evening course work.

JAG/sjw

January 19, 1987

Michael Anikeeff
Senior Associate, Continuing Education
815 Thayer Avenue, #1208
Silver Springs, MD 20910

RE: National School for Real Estate Development

Dear Mike:

I am sorry for the delay. I have sent the attached course outline and memo to all of those indicated by courier and will call them at the end of the week to see if they have any critical changes or limitations. Should any of the instructors be limited to one session or be unable to particpate unexpectedly, I would suggest our Professor Rod Matthews as a back up for John Griffin, Professor Mike Robbins or Jim Canestero as a back up to me, Claude Gruen or Terry Grissom as a back up to Dowell Myers, and Stephen W. Chamberlin of Rouse and Associates as an alternative to Ron Barbieri. Mr. Chamberlin can be contacted at 45 Belden Place, San Francisco, California, 94104; telephone number (415) 433-4000.

I will prepare a bibliography on non-ULI materials that should be basic reference text for anybody in the development business as part of our development process notebook. In the meantime, here are the two handbooks on site analysis that I mentioned to you earlier. The first is smaller with somewhat better graphics while the second is more comprehensive:

1. SITE RECONNAISSANCE AND ENGINEERING, Harlow C. Landphair, John L. Motloch, Elsevier Science Publishing Co., Inc., New York, NY, 1985.

2. TIME-SAVER STANDARDS FOR SITE PLANNING, Joseph DeChiara, Lee E. Koppelman, McGraw-Hill Book Co., New York, NY, 1984.

The computer course outline is in process and Mike Robbins and I will call towards the end of the week to see how much we might want to use ULI member expertise as lecturers as opposed to simply our University of Wisconsin staff here with a couple of my local graduate students as teaching assistants. The former seems the political thing to do, perhaps on a show-and-tell basis for a couple of cases, while the travel money could be better spent on more teaching assistants to help people get started on the machines.

I look forward to your comments

Sincerely,

James A. Graaskamp, Ph.D., SREA, CRE
Urban Land Economist

Enclosure

The School of Business
University of Wisconsin-Madison

Graduate School of Business
1155 Observatory Drive
Madison, WI 53706
608/262-0391

January 26, 1987

Sent 1/87/26

Realty Micro-Systems, Inc.
P.O. Box 532
Lewiston, NY 14092

Gentlemen:

We believe you are presently distributing a Real Estate Investment Model called ATV, originally developed by Robert Martin from North Carolina. This is a very straight forward program which we understand has been expanded with several options for leases, construction, and others.

The University of Wisconsin School of Business has been asked to develop a one week course on computer applications to real estate development using the microcomputer, directed to members of ULI and their employees. Before spending several days on how to do spread sheets for special development problems, we would like to use demonstrations of three or four existing investment/evaluation programs. To that end we would like to buy a complete set of your materials plus 35 sample discs for a demonstration of your program to be used by the students without opportunity to steal the program. Our microcomputer lab has 35 IBM-PC computers so that each student will be doing a set of problems between each 30 minutes of lecture. The student would receive your sample disc while your complete manual would be available as a reference. We would use the full model to develop several illustrative problem sets.

The first computer seminar will be held the week of June 15 on the University of Wisconsin campus, and a second seminar will be held on the West coast in the Fall at a university to be chosen.

We look forward to your suggestions and current pricing lists.

Sincerely,

Prof. James A. Graaskamp (SW)

Professor James A. Graaskamp
Chairman, Real Estate and Urban Land Economics

JAG:sw

The School of Business
University of Wisconsin-Madison

Graduate School of Business
1155 Observatory Drive
Madison, WI 53706
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January 27, 1987

Michael Anikeeff
Urban Land Institute
1090 Vermont Avenue, NW
Washington, D.C. 20005

Planning Issues:

1. Students will steal programs and disks as a part of the course.

   A. For Wisconsin original programs, we would suggest that we let them take the stuff and you provide University of Wisconsin a fee of $100 per student for the leakage of MR GIB, MR CAP and a variety of other sample programs.

2. For other proprietary programs we propose the supplier of the program give us a student sample disk of some component of the overall program.

3. The alternative is to find a computer lab where each machine has 10K or more of hard disk which is preloaded with everything you needed for the course and the A-drive was disconnected so it cannot be copied.

Visting Faculty:

1. We recommend that most of the teaching budget go to teaching assistants so that we have one for each row of students during the lab times.

   A. The Harvard Total Project Manager II should be presented by someone familiar with that program; it might be useful to use Ehud Mouchly from the west coast for a day on land development and sensitivity models so that he could take the lead on the west coast presentations. Otherwise we might involve Rich Peiser at USC, or Bob Knitter at the University of San Francisco.

   B. We have a cadre of lab assistants here in Madison so we don't need additional help except to the degree that we can use the course to integrate other ULI participants to provide leadership at non-Wisconsin sites.

   C. Budget will need to recognize floppy disks free for the student (for the first two) and the need to reproduce operating manuals, overhead slides and similar materials that can be reused in subsequent seminars.

D. One evening we may wish to have a show and tell on newer systems such as PROJECTION, or CREAMS, or REFINE.

E. Doug Stoker of Skidmore, Owens, and Merrill makes a very exciting presentation on the architectural office as the fundamental source of spatially located data for facilities management. He argues that asset management will require continual refinement of the original project. Moreover, he argues that give the architect the opportunity to sell a continuing service and the architect as building professional will become an integral part of the property manager and a life cycle cash flow system.