

JAMES A. GRAASKAMP COLLECTION OF TEACHING MATERIALS

V. INDUSTRY SEMINARS AND SPEECHES - SHORT TERM

A. Appraisal Organizations

6. 1974

- a. "A Guide to Feasibility Analysis",  
jointly sponsored by Central Florida  
Chapter of American Society of  
Appraisers and University of Florida,  
January 9, 1974

## **A GUIDE TO FEASIBILITY ANALYSIS**

**A Seminar at the University of Florida Student Union  
Jointly Sponsored by  
Central Florida Chapter of American Society of Appraisers  
University of Florida College of Business Administration  
Gainesville, Florida  
Wednesday, January 9, 1974**

**Instructed by Professor James A. Graaskamp  
University of Wisconsin School of Business**

### **MORNING SESSION: 9:00 A.M.**

- A. Real Estate as an Enterprise and the Management Process**
- B. Elements of a Total Feasibility Analysis**
- C. Elements of Financial Feasibility**

### **COFFEE BREAK - 10:30**

- D. The Concept of Risk**
- E. Determining Strategic Alternatives of Real Estate**
- F. Objectives and Criteria of the Client**
- G. Structuring Market Data Analysis with Models**

### **LUNCHEON - 12:00**

### **AFTERNOON SESSION: 1:00 P.M.**

- A. Market Segmentation and Identification of Prospective Buyers or Tenants**
- B. Developing a Customer Profile**
- C. Planning and Executing a Consumer Survey**
- D. Specification of a Product Mix and Price Range**

### **COFFEE BREAK - 2:30**

- E. Structuring the Financial Analysis**
- F. Modeling Cash Flow Simulation for Rental Properties**
- G. Evolution of Concepts for Measuring Rate of Return**
- H. Risk Evaluation**
- I. Pre-Architectural Programming**

## FEASIBILITY ANALYSIS SEMINAR OUTLINE

January 9, 1973  
Gainesville, Florida

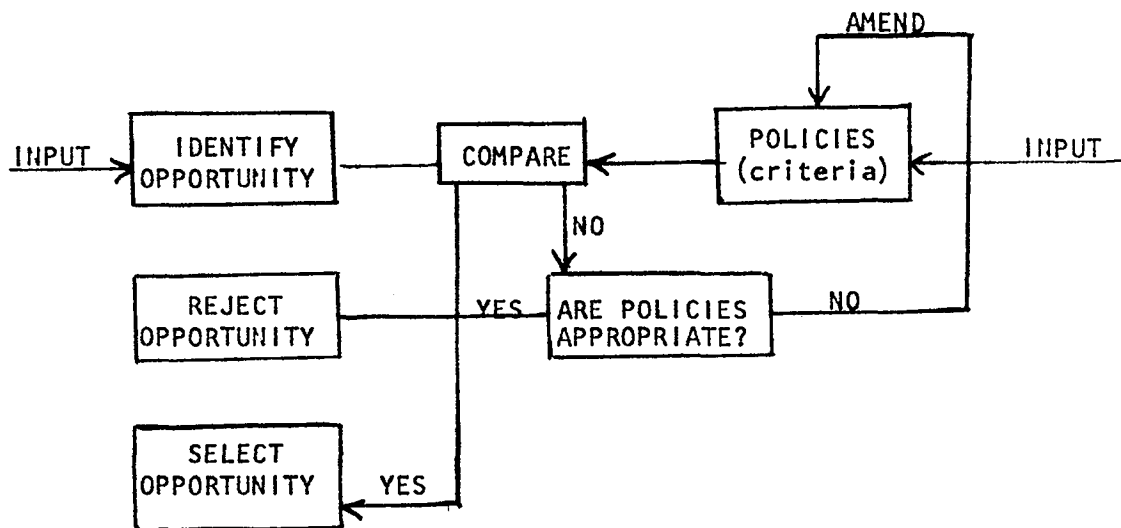
### I. Real Estate as an Enterprise and the Management Process

#### A. Traditional Sequence of Management Function:

1. Planning
2. Organizing
3. Directing
4. Controlling

#### B. Modern Management Theory treats any undertaking which is organized to accomplish a purpose as an enterprise. The functional steps in a systematic enterprise are:

1. Goal-setting
2. Forming policies
3. Searching for opportunities which are consistent with policies
4. Selecting opportunities which are consistent with policies
5. Designing systems for capturing selected opportunities
6. Installing systems for capturing selected opportunities
7. Operating the systems that have been installed
8. Maintaining and continuously perfecting the operating systems



#### C. This list suggests a flow of events, the presence of standards or policies for go or no-go decisions, and hints at the presence of feedback as part of a dynamic systems process.

1. Feasibility analysis will be concerned primarily with the first five functions
2. Many enterprises are cash cycle enterprises

D. Real estate is a special case of the cash cycle enterprise because:

1. The length of the time cycle is so long
2. The enterprise and the tools are so similar
3. The nature of real estate as an economic good - space over time and money over time
4. A real estate project as an assembly of sub-systems

E. In the language of systems the basic elements are:

1. Existing conditions - a specific location or quantity referred to as levels, reservoirs or states.
2. Action is a change from one level or state to another and is measured by flow rates.
3. Choices reflect alternative flow rates which can be controlled or selected and changing the flow rate is a decision.
4. Information channels carry messages about states and flow rates which lead to decisions to modify to achieve some objective or criterion.
5. Feasibility analysts are typically involved in identifying and measuring flow rates and their probable patterns in light of some decision.

F. There are three types of information which affect the decision:

1. Outside information about alternatives which is generally available to inquiry or can be generated by inference from observed behavior.
2. Inside information which is the product of information flows internally generated from the experience of the organization and internal values and objectives.
3. Intuitive information which relates to the perceptions, skills, and bias of the decision maker.
4. Appraisal tends to ignore the latter two while feasibility analysis generally begins with the latter two.

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

1. Put in another way, that of the designer, one must judge the success of a work of art by matching its form to its context.
2. Context is that part of the environment which will not change and to which one must adapt or one must achieve. A firm objective is as much a constraint as unchangeable zoning.
3. Form is concerned with those elements of the environment which can be molded, adapted, or assembled to fit the critical requirements and objectives of the context.

4. Success is evaluated by the fit of form to the critical elements of context - an ensemble which first requires identification of the context or problem to be solved.
5. The systems concept of the firm as a consensus between forces and the artists idea of form in context then leads to this definition of feasibility:

"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."--  
James A. Graaskamp

## 11. Elements of a Total Feasibility Analysis

The basic forces or elements of context which make a feasibility problem manageable also lead to understanding of the proper report titles as it is seldom that one does a complete feasibility study as a single report.

### A. The subject matter can be classified as:

1. Strategic objectives and tactics (policies)
2. Market trends and opportunity areas
3. Merchandising targets with monopoly characteristics
4. Legal-political constraints
5. Ethical-esthetic constraints
6. Physical-technical constraints
7. Financial constraints

### B. These elements also name the report type:

1. Strategy study: selection of objectives, tactics, and decision criteria.
2. Market analysis: economic base studies or other related aggregate data review.
3. Merchandising studies: consumer surveys, competitive property analysis, marketability evaluation, etc.
4. Legal studies: opinion on potential legal constraints, model contracts or forms of organization, and political briefs.
5. Compatability studies of project to community planning, conservation standards, or other public policies.
6. Engineering, land planning, and architectural studies.
7. Financial studies: economic modeling, capital budgets, present value and discounted cash flow forecasts, rate of return analysis, financial packages.

### C. The report types also suggest the potential contribution by other specialties and the basic character of a statement of limiting conditions.

1. The analyst as an expert on experts
2. Synthesis of all reports in the financial report
3. Real estate as a set of assumptions and permission of the client as to which set of assumptions are acceptable as provided by others.

### III. Elements of Financial Feasibility

- A. Identification of selected profit centers
- B. Specification of the common denominator - a time line - schedule of outlays and receipts
- C. The capital budget (source & application)
  - 1. Construction costs
  - 2. Carrying costs
- D. Operating budgets (source & application)
  - 1. Pattern of sales revenues
  - 2. Fixed management costs
  - 3. General sales costs and investment
- E. Financing plan
  - 1. Credit amounts and terms
  - 2. Equity amounts and terms
  - 3. Holding power
- F. Profits classified as to type and tax
  - 1. Cash from operations
  - 2. Cash from capital gains
  - 3. Cash surplus from financing
  - 4. Cash from tax savings on other income
  - 5. Cash from reduction or shift of fixed outlays
  - 6. Indirect non-cash benefits
- G. Selected measures of profitability
  - 1. Definition of investment
  - 2. Definition of profit
- H. Selected measures of risk
  - 1. Payback periods
  - 2. Capacity for variance
  - 3. Variance control

### IV. Modern management defines risk as the potential variance between expectations and realizations, i.e., between pro forma prospects and balance sheet and P & L statements.

- A. Dynamic risks can produce profit or loss and are best controlled by the finesse of management execution of a plan.
- B. Static risks are those which can only cause a loss due to surprise upset of a plan.

- C. Risk management has two objectives:
  - 1. Conservation of existing enterprise assets despite surprise events
  - 2. Realization of budgeted expectations despite surprise events
- D. The process of risk management involves:
  - 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
- E. Alternative methods for surviving potential risk losses:
  - 1. Eliminate risk exposure
  - 2. Reduce frequency or severity of accident
  - 3. Combine risks to increase predictability (reserves for expenses)
  - 4. Shift risk by contract (subcontracts or escape clauses)
  - 5. Shift risk by combination by contract (insurance)
  - 6. Limit maximum loss (corporate shell or limited partnership)
  - 7. Hedging

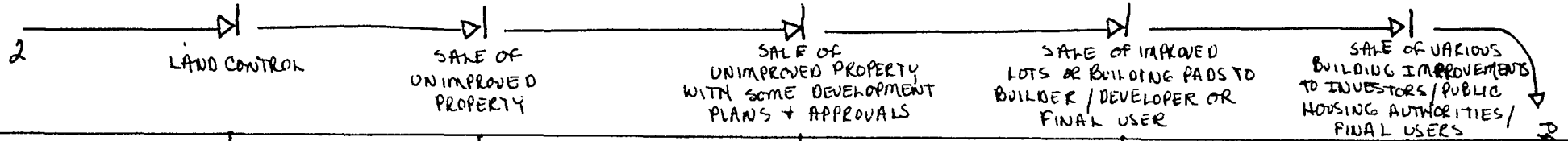
#### V. Determining Objectives and Criteria of the Client

- A. Feasibility consultant has three alternative situations:
  - 1. A site or product in search of a user
  - 2. A specific consumer in search of a site and a product
  - 3. A specific client in search of an opportunity in real estate
- B. To oversimplify there are five phases of real estate investment or development which require significantly different investment strategic and expertise.
  - 1. Purchase and sale of unimproved property
  - 2. Purchase and sale of unimproved property packaged with master plan and public approval
  - 3. Purchase and sale of improved lots and building sites
  - 4. Sale of totally improved investment properties to investors/public agencies/ultimate users
  - 5. Purchase for long term management of investment income properties
- C. Each development role requires definition of acceptable input of or combinations of:
  - 1. Entrepreneurial imagination versus management precision
  - 2. Forecasting of external events versus internal controls of a process
  - 3. Equity-debt cash/profit margins/vulnerability to timing
  - 4. Degree of control of consumer, producer, or public inputs
- D. Real estate equity - the degree to which one controls disbursements of a captive customer for services
  - 1. Growing public consensus that land is an inexhaustible resource and therefore a public utility
  - 2. Improvements to land affect social organizations as well as priorities for resource conservation
  - 3. Money, not real estate, is the private resource in the real estate process
  - 4. During the 70's the public will develop regulatory mechanics to control use, internalize development costs while minimizing windfalls and wipeouts of private money assets.
- E. To define client constraints and objectives, interviews should reveal:

# STRATEGIC FORMAT OF DEVELOPER ROLE AND FUNCTION

	LAND CONTROL	SALE OF UNIMPROVED PROPERTY	SALE OF UNIMPROVED PROPERTY WITH SOME DEVELOPMENT PLANS & APPROVALS	SALE OF IMPROVED LOTS OR BUILDING PADS TO BUILDER/DEVELOPER OR FINAL USER	SALE OF VARIOUS BUILDING IMPROVEMENT TO INVESTORS/PUBLIC HOUSING AUTHORITIES/FINAL USERS
DEVELOPMENT ROLE ASSUMED	LAND SPECULATION hold or "land bank" interesting property	"PACKAGING" conceptualize development plan or land use — acquire broader public approvals such as zoning — arrange financing or structure deal.	LAND DEVELOPER undertake and complete land development phase — install roads, utilities, common improvements, survey and subdivide for sale.	BUILDING DEVELOPER undertake and complete various building improvements — offer and consummate sales.	
MAJOR OBJECTIVE	capture "spread" between raw land purchase cost and wholesale price created by "mass" market trends.	increase spread or value by bringing an important trend to focus on a specific site or into focus as a potential project. Shift buyer's perception through description, analysis, various "enabling" factors.	increase spread or value by virtue of completing improvements that further shift buyer's perception of utility and make sites available for construction.	create construction and sales profit through completion of building improvements that further shift buyer's perception of utility/value and make buildings available for occupancy/ownership.	
KEY DETERMINANTS OF ECONOMIC SUCCESS	1) ability to accurately forecast a trend 2) ability to select and control attractive land	1) ability to complete a convincing study of economic feasibility. 2) ability to obtain key public action in timely fashion 3) ability to perform at "conceptual selling"	1) ability to efficiently complete various improvements 2) ability to efficiently (and tastefully) market improved building sites. 3) ability to carry financing cost	1) ability to efficiently complete various building improvements 2) ability to efficiently market 3) ability to carry debt.	
THOSE ELEMENTS OF THE COST/PRICE RELATIONSHIP OVER WHICH THE DEVELOPER HAS SOME CONTROL  (major tasks to be completed or costs to be incurred — specific problems of estimating, analysis, evaluation)	1) land price 2) carrying costs 3) legal expense 4) maximum loss	5) feasibility determination: • site or physical determinants • regulatory or political factors • market determinants • "reappraisal" or investment valuation (what's the deal worth if we <u>do it</u> vs. what's the deal worth if we <u>get out now</u> ? 6. obtain basic public approvals (zoning) 7) arrangement of financing (takeout) 8) marketing costs	9) obtain specific public approvals 10) negotiate and secure various contracts within budget 11) stage/manage/control development on time, within budget + quality standards 12) arrange interim financing — land development loan 13) stage/manage/control the marketing of improved lots or building sites 14) obtain sales approval, registration, etc.	15) obtain construction permits + approvals 16) negotiate and secure various contracts within budget. 17) stage/manage/control construction effort on time, within budget + quality standards 18) arrange interim + long term financing (construction loan and mortgage) 19. stage/manage/control the marketing of various building improvements 20. obtain sales approval, registration, etc.	





ELEMENTS OF RISK INCURRED (or places where "slippage" may occur)					
1) various factors or events never materialize in a way that makes the property an attractive candidate for development 2) complete lack of analysis, planning, or other preparation for development means that property is never perceived as attractive or ready for development	1) costs of undertaking and completing above-listed analyses, estimates (esp. if feasibility study produces unattractive outcome and development is dropped) 2) development cost shifts 3) shifts in market situation (new market or competitive standard, general economic conditions) 4) regulatory standards change 5) cost or availability of financing shifts 6) reliability of various estimates + analyses 7) lose control of land or development situation 8) public approvals denied, delayed, or conditioned	1) delay in obtaining public approvals, attachment of conditions to approval, high costs of soliciting approval, or denial. 2) delay in completion of improvements 3) cost over-run on improvements 4) poor quality of finished improvements or related adverse side effects (eg. class action suits) 5) failure to carefully estimate TOTAL cost of improvements (installation, operation/maintenance, assurances) 6) lagging market performances • slowed pace of sales • lower price of units offered • higher cost of sales	1) delay in obtaining permits 2) delay in completion of improvements 3) cost over-run on improvements 4) poor quality of finished improvements or related adverse effects (eg. call-backs, class actions) 5) lagging market performance • slowed pace of sales • lower price of units offered • higher cost of sales		
GENERALIZATIONS	entrepreneurial-intensive roles	time necessary to capture profit is diminishing (holding period shortens) and this affects capital turnover? How about "entry fee" or amount of capital needed, however?	ratio of value-added to costs is diminishing as the composite cost base builds up?	management-intensive roles	
			more complexity, more internal variables to control; management burden requirements?	incremental cost vs profit centers	→
			increasing "image" or credibility exposure — what are the consequences of taking on a deal and failing — a lingering risk even if you escape with the dollars		→

1. His preferred method of meeting entrepreneurial risk
  2. His preferred method of personnel compensation
  3. His style of value decision trade-offs between qualitative and quantitative issues
  4. His perception of his risk position and his risk utility "curve"
  5. His personal non-business objective
- F. Establish viewpoint of the party making a decision of the basis of the report
1. Lender
  2. Investor
  3. Judge, jury, or committee
  4. Etc.

## VI. Structuring Market Data Analysis With Models

- A. Creating devices which will discard most data and logically relate the rest.
1. Unit of market demand
  2. Models explain what you are going to do
  3. Models explain relationships and key assumptions
  4. Models permit client to test his own assumptions for a range of alternative outcomes
- B. The basic issue of any research methodology:
1. What is the question?
  2. What data is available which is relevant?
  3. What theory is available to focus data on the question?
  4. How will the results be communicated?
  5. What are the abilities of the analyst?
  6. What's the cost benefit ratio between the method and the question?
- C. Conversion of highway traffic to historical exhibit admissions (See chart Flow Diagram, page 40)

### SKIER MOTEL ROOM DEMAND MODEL

$$P \times R \times T \times D - PR \times MS = \text{Rooms per Average Weekend Day}$$

Where: P = Total population for counties in the overnight trade area  
 R = Skier participation rate on the average winter Sunday  
 T = For all skiers the average number of overnight skiing trips  
 D = Average length (days) of overnight skiing trips  
 MS = Market Share (%) of weekend skiers that the motel can capture  
 PR = Number of people staying in each room of motel

Total population for surrounding counties	x .0046	Average Sunday participation rate	x .9	trips per year	1.86	days per trip
Three people per room	x 2.5%	conservative market share	= 208	rooms per average weekend day		

## FEASIBILITY ANALYSIS--AFTERNOON SESSION

## I. Market Segmentation and Identification

- A. Real estate enterprise uses small micro-markets and the merchandising assumptions are the critical elements of feasibility.
- B. First name the typical revenue unit or method of measuring profit per sales unit
  - 1. Per acre
  - 2. Per apartment
  - 3. Per event
- C. Then identify the customer units--who signs the check--the doctor or the clinic? The ticket buyer or the promoter? The salesman or the firm? The manager or the vice president?
- D. Devices for generating a prospect list or spotting customers

## II. Identification of the Prospective Buyers or Tenants

- A. The rate of market absorption is the single most important assumption in projecting the revenue stream of a project. Since real estate consists of micro-markets of demand and most secondary data is aggregate data, it follows you must identify a customer or prospect by name and source in order to count him, find out what he wants, and inform him about the product.
- B. Devices for generating a prospect list:
  - 1. Application of the reverse directory to the addresses of comparable projects.
  - 2. Application of reverse directory to appropriate neighborhoods, census tracts, etc.
  - 3. Identification of a common link through a church group, club membership, magazine subscription, etc.
  - 4. Customer spotting by license number, boat registration, camper registration, etc.
  - 5. Identification from guest registry books, charge accounts names, tax records, zip codes, etc.
- C. Objectives of prospect identification and contact
  - 1. Scaling the market with a body count
  - 2. Classifying the body count by major distinctions as to location or product type
  - 3. Identification of customer segments unsatisfied with present alternatives
  - 4. Identification of opportunities--gaps in competitive alternatives
- D. Survey of competitive projects
  - 1. Definition of the competitive standard
  - 2. Possible discovery of a competitive differential

- E. Questioning the consumer prospect to test or discover a competitive differential
- F. A consumer profile will provide a definition of product and price which has some monopoly characteristics in order to control unexpected variance in price and absorption rate. It is this objective which is the significance of the real estate chant of location, location, and location. Location can be manufactured through proper merchandising research.

### III. Developing a Customer Profile with a Consumer Survey

- A. The consumer survey is directed at confirming questions of who, how many, where, what attributes, and how much will they pay.
- B. Typically, you will rely on direct mail, phone call, or interview techniques.
- C. Surveys can provide different types of information depending on the budget and the design of the survey:
  - 1. Statistical profile of age, location, family size, etc.
  - 2. Strength of preferences in terms of what they feel strongly about, for or against or what they're disinterested in.
  - 3. Trade-off questions in terms of space vs. features, privacy vs. economy or whatever.
- D. Appraisers are qualified to do the first type of survey but should generally rely on consumer research sociologists for the others. Feasibility is a team sport.
  - 1. The initial cycle of micro-demand analysis is less detailed than questions related to final project design factors.
  - 2. Look only for serious misfits between proposals and preferences and eventually part of the results of the survey will be in the judgements of the analyst or random comments by the respondent.
- E. First format the table that is desired in the report and the role of the table in arriving at conclusions.
- F. Secondly, decide how you are going to compute the desired table and its results from the survey--by hand, through statistical methods, or through computerized tabulation and cross-tabulation. Designing these mechanics then leads to selection of the critical question and the form in which the answer will be provided.
  - 1. Be careful to correctly title the mock-up of your table and its columns.
  - 2. Write down the survey questionnaire recording and processing technique. There is always a difference between imagining the process and actually doing it.
- G. Third, consider whether you want statistical information, general preferences, or precise trade-off measures:
  - 1. To select a survey technique
  - 2. Estimate the skill level required in execution

3. Estimate a budget
  4. Estimate the time necessary to complete the survey
- H. Drafting and testing questions (refer to 'How's That Again?')
1. Technical or vernacular terminology
  2. Controlled vs. open end responses
  3. Data processing or coding problems
  4. Mail vs. telephone style
- I. Review of Landmark recreational condominium questionnaire (refer to attached questionnaire)
- J. Presentation of findings
1. Segmentation of subsets of frequency distributions. For example, How would you rate the following Wisconsin vacation areas as locations for a second home? Please number your top three choices in order of your preference.
- |                           |             |          |                 |             |          |
|---------------------------|-------------|----------|-----------------|-------------|----------|
|                           | <u>Ave.</u> |          |                 | <u>Ave.</u> |          |
| a. Lake Geneva            | 1.19        | 2        | e. Telemark     | 1.6         | 1        |
| b. Green Lake             | .24         | <u>5</u> | f. Door County  | .69         | <u>3</u> |
| c. Lake Winnebago         | .17         | <u>6</u> | g. Spring Green | .12         | <u>7</u> |
| d. Lake Minocqua-Tomahawk | .56         | <u>4</u> | h. Other _____  |             | —        |
- (3 points for first, two for second, one for third, 0 for rest)
2. Presentation of subsets of cross tabulation to identify possible relationships
  3. Computation of ratios or factors required for larger marketing model
  4. Identification of critical misfits between questionnaire results and project or site attributes
  5. Open end responses in Appendix with each question followed by a list of quoted answers selected for relevance
- K. The customer profile should provide the analyst and his client with the following:
1. A prospect list
  2. Statistical micro-markets among the prospects
  3. Major motivations which lead to rent or buy decisions
  4. Major misfits or irritants in their present alternatives
  5. An approximate measure of the potential number of prospects
  6. A reasonable range of alternative capture rates given alternative product features

# Landmark Research Inc.

November 10, 1971

Thomas L. Turk  
James A. Graaskamp

Dear Resident:

One of our clients is considering the development of several recreational "second home" projects in the form of condominium units set among recreational complexes which include golfing, marina, and winter sport facilities. A key element of each plan is a resort-inn with complete facilities, which would make available grounds maintenance, maid service, catering, and year round indoor sports facilities to condominium owners.

These resort-inns are already established summer resorts and popular off-season centers for business meetings and seminars. The key question is whether families are thinking about the four-season recreational pattern that is developing in Wisconsin and whether sophisticated family planners are thinking in terms of purchase of a recreational home in their favorite summer vacation area.

Wisconsin may be thought of as the place for inexpensive summer vacations while winter outings are in the South. However, investment in a second home would suggest year round use and enjoyment and a mix of seasonal activities. To survey attitudes about vacations, Wisconsin recreation centers and condominiums we have constructed a mailing list of selected people of means, who have demonstrated sophisticated tastes in recreation. Would you please answer the following brief questions? There is no way to identify a response and this letter is not a sales promotion.

Professor James A. Graaskamp

1. Does your family generally vacation each year in Wisconsin?

☐ No  
↓

☐ Yes → For each season circle the number of weeks during which you vacation and indicate the most preferred location.

	Circle						Most Preferred Location
Winter	1	2	3	4	5	6+	_____
Spring	1	2	3	4	5	6+	_____
Summer	1	2	3	4	5	6+	_____
Fall	1	2	3	4	5	6+	_____

2. Do you presently own a summer home or cabin site?

☐ No  
↓

☐ Yes → County \_\_\_\_\_ State \_\_\_\_\_  
Would you trade your present summer home or cabin site for a recreation condominium to avoid maintenance work or the bother of building your own vacation home? ☐ Yes ☐ No ☐ Maybe

3. Would you prefer a secluded informal "get away from it all" weekend retreat to a better equipped more active social center? ☐ Yes ☐ No

4. Would you ever consider purchase of a carefree condominium in the heart of a recreational complex?

☐ Yes  
↓

☐ No → What is your main reason? \_\_\_\_\_  
If No, stop here and return the questionnaire. Thank you.

5. If you would consider purchase of a carefree recreational home or weekend retreat, which of the following locations would you most prefer and least prefer? Check only one in each column:

	Most Preferred Location	Most Disliked Location
1. Lake Geneva	( )	( )
2. Green Lake	( )	( )
3. Lake Winnebago	( )	( )
4. Lake Minocqua-Tomahawk	( )	( )
5. Sturgeon Bay-Door County	( )	( )
6. Telemark-Hayward County	( )	( )
7. Spring Green-Iowa County	( )	( )
8. Other (please specify) _____		

The best use of a recreational home is possible if the family enjoys a variety of activities during the off seasons, that is, during parts of the year other than the summer months of June, July, and August.

6. One type of relaxation at the recreation home might be outdoor activities such as: (check preferences)

- ( ) Tennis
- ( ) Sail boating
- ( ) Power boating
- ( ) Fall and spring golfing
- ( ) Fall and spring lake fishing
- ( ) Fall and spring fishing in stocked ponds
- ( ) Winter skiing on beginner and intermediate slopes
- ( ) Snowmobiling on an extensive trail system
- ( ) Ice boating
- ( ) Ice skating on an outdoor rink
- ( ) Skeet shooting
- ( ) Trail system for walking
- ( ) Trail system for biking

7. Indoor recreation facilities for the seasonal homeowner might include: (check preferences)

- ( ) Ice skating on an indoor rink
- ( ) Indoor tennis court
- ( ) Indoor swimming
- ( ) Sauna and whirlpool bath
- ( ) Handball and paddle ball courts
- ( ) Pool tables
- ( ) Card rooms with bar service
- ( ) Indoor golf driving range

8. Have you ever visited a recreational condominium in the United States?

No  
↓

Yes → Which one? \_\_\_\_\_  
 → What impressed you most? \_\_\_\_\_

9. Do you now own or were you a former owner of a condominium?

No  
↓

Yes → Would you buy one again: ☐ Yes ☐ No  
☐ No → Why not? \_\_\_\_\_

10. Since not everyone wants to use or to pay maintenance for all facilities, would you prefer: (check one preference)
- ( ) To reduce costs of maintaining facilities to a minimum by sharing major facilities such as a golf course or indoor tennis court with guests of the nearby exclusive resort inn, each user paying a low green fee or similar user charge only if, and when he uses it.
  - ( ) To maximize convenience of user by reserving major facilities exclusively for condominium owners only but only the user would be assessed for maintenance cost by means of annual subscriptions or memberships.
  - ( ) To compromise between low cost of first plan or high cost of exclusive facilities, maintenance charges could be shared with resort inn and all members of the condominium group, with condominium owners given preference for prime time in the evening and weekend afternoons with a reservation system.
  - ( ) Your ideas \_\_\_\_\_
11. If you were to consider purchase of a condominium, within a recreational complex, what type of unit would you prefer? (check one)
- ( ) Single family detached unit
  - ( ) Small clustered groups of two-four units (the Quadraminium)
  - ( ) Larger clusters of low rise townhouses in 8-20 units
  - ( ) High rise apartment style unit secluded from resort inn
  - ( ) High rise apartment style unit (8 stories) with all weather connection to resort-inn
  - ( ) Have another idea? Please describe \_\_\_\_\_
12. What features of a site do you think are most important for a condominium? (check one for each of the features below)
- |   | Very<br>Important | Desirable | Not<br>Necessary |
|---|-------------------|-----------|------------------|
| View of the lake                                  | ( )               | ( )       | ( )              |
| View of the countryside                           | ( )               | ( )       | ( )              |
| Seclusion from traffic noise                      | ( )               | ( )       | ( )              |
| View of boat channel or lagoon                    | ( )               | ( )       | ( )              |
| Seclusion from strollers                          | ( )               | ( )       | ( )              |
| Isolation from lots of people                     | ( )               | ( )       | ( )              |
| Walking distance to shops                         | ( )               | ( )       | ( )              |
| Walking distance to social centers at resort-inn  | ( )               | ( )       | ( )              |
| Boat tie-up at back door                          | ( )               | ( )       | ( )              |
| Private garden area                               | ( )               | ( )       | ( )              |
| Lighted and paved walking trails                  | ( )               | ( )       | ( )              |
| Heavy woods                                       | ( )               | ( )       | ( )              |
| Extensive lawns                                   | ( )               | ( )       | ( )              |
| No steps or stairways between car & home entrance | ( )               | ( )       | ( )              |
13. Since everyone's preference must yield to their budget, what price range do you feel would be justified for a condominium as sketched by this questionnaire? Indicate what use of the condominium you would have in mind?
- |  |                      |                      |
|--|----------------------|----------------------|
| <input type="checkbox"/> Family seasonal | ( ) \$ 20,000-24,999 | ( ) \$ 40,000-44,999 |
|  | ( ) 25,000-29,999    | ( ) 45,000-49,999    |
| <input type="checkbox"/> Legal residence | ( ) 30,000-34,999    | ( ) Could pay more   |
|  | ( ) 35,000-39,999    | for right house      |



14. What type of building features would you prefer in the layout of the condominium unit? (choose only one of each of the following sets of alternatives)

- ( ) Two bedrooms with larger living area or/  
( ) Three bedrooms \_\_\_\_\_  
\_\_\_\_\_  
( ) Three bedrooms, or/  
( ) Four bedrooms, or/  
( ) Large master bedroom and two 4-bed bunk rooms \_\_\_\_\_  
\_\_\_\_\_  
( ) Two-story living room with inside balcony, or/  
( ) Living room with beamed cathedral ceiling \_\_\_\_\_  
\_\_\_\_\_  
( ) Full dining room, or  
( ) Dining "L" plus family-sized kitchen \_\_\_\_\_  
\_\_\_\_\_  
( ) Sundeck balcony for living room or/  
( ) Outdoor patio at ground level \_\_\_\_\_  
\_\_\_\_\_  
( ) Walk-in closets in each room or/  
( ) Large work room plus laundry room in each unit & standard closets \_\_\_\_\_  
\_\_\_\_\_  
( ) One car garage attached to unit or/  
( ) Two car garage in group parking complex, or/  
( ) Carport and lower price \_\_\_\_\_  
\_\_\_\_\_  
( ) Central air conditioning or/  
( ) Woodburning masonry fireplace or/  
( ) Gas-log fireplace and window air conditioning unit \_\_\_\_\_  
\_\_\_\_\_  
( ) Contemporary natural decor with wood and rock materials, or/  
( ) Maintenance-free modern masonry and aluminum exteriors, or/  
( ) Well styled colonial detailing \_\_\_\_\_  
\_\_\_\_\_  
( ) Extensive outside landscaping, or/  
( ) More floor space in each room \_\_\_\_\_

15. Please indicate the number of adults and children who presently live in your household?

Adults (number) \_\_\_\_\_ Children: Under 6 \_\_\_\_\_  
6-12 \_\_\_\_\_  
Age of head of household \_\_\_\_\_ 13-17 \_\_\_\_\_  
Occupation \_\_\_\_\_ 18 & over \_\_\_\_\_  
Hometown \_\_\_\_\_

Number of dogs and cats \_\_\_\_\_

16. Your comments and suggestions \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Thank you.

#### IV. Structuring the financial analysis

- A. Good real estate occurs where each of the three elements of the real estate process, the producer, the consumer, and the public all achieve solvency in their cash flows.

1. Impact zoning - House & Home, August 1972 and September 1973
2. Ramapo Ordinance

- B. The real estate business is the process of converting space-time assumptions about the product into money-time flows for the business.

1. Conversions are based on combinations of empirical data and estimates.
2. Investment in real estate is purchase of a set of assumptions.
3. Risk is the variance which could occur between assumptions and realizations.
4. Analysis is the testing of assumptions and consequences for alternative outcomes and their probabilities.

- C. Financial models change depending on viewpoint and purpose.  
(see chart "Comparison of Critical Valuation Assumptions for Three Present Value Viewpoints in Real Estate").

- V. Cash flow models may have an infinite variety of features and formats for the same reasons that marketing models may differ as discussed previously.

- A. A very basic teaching model for analysis of a real estate investment would require:

1. A time line for all financial events
2. Schedule of outlays
3. Schedule of receipts
4. A relationship of outlays and receipts called a rate of return
5. Some measures of risk (tolerance for variance in outlays, receipts, or schedule)

- B. A structure for estimating cash flows for rental property (see chart) simply elaborates on definitions and accounting allocations of outlays and receipts.

- C. A general format for cash flow analysis of land development (see chart)

- D. Review of cash flow from basic computer model of a 24 unit remodeled apartment building investment (see computer output)

- E. Measuring the rate of return requires definition of owner's investment position and owner's definition of desired benefits. (see chart defining financial ratios)

1. Original cash equity, unrecovered cash equity, or liquidating equity
2. Relative weight placed on after-tax cash, tax saving to other income, equity build-up, appreciation over original cost.
3. Maximizing dollars or maximizing rate of return with given risk dimension
4. The re-investment assumption

# COMPARISON OF CRITICAL VALUATION ASSUMPTIONS FOR THREE PRESENT VALUE VIEWPOINTS IN REAL ESTATE

Prepared for Discussion at Feasibility Seminar  
University of Florida  
by Professor James A. Graaskamp  
January 9, 1974

Col. A	Col. B	Col. C
Economic Allocation of Resources	Accept or Reject Loan Application or How Much to Lend?	Which Investment Has the Best Probability of Maximizing Net Spendable & Net Worth
1. Instant investment	1. Instant investment	1. Discontinuous series of outlays
2. Productivity limited to net income from parcel before debt and income tax	2. Productivity limited to parcel after debt but before income tax	2. Productivity is net change in spendable cash from all sources after debt and income tax traced to real estate.
3. Continuous income function	3. Continuous income function	3. Discontinuous series of tax classified receipts
4. Recapture from income	4. Recapture from income & resale	4. Payback of equity from spendable cash and debt from net revenue & resale.
5. Projected for full useful life of improvements	5. Projected for normal turnover period 5-10 years of typical investor	5. Projected for elapsed time of outlays and receipts for specific investor time line horizon.
6. Arbitrary discount factor	6. Weighted afe rage Inwood discounting	6. Selected present value discounting based on characteristics of investor and property revenue pattern

F. The evolution in yield analysis reflects assumptions and sophistication in defining "stream of benefits".

1. Broker's yield
2. Inwood discounting
3. The internal rate of return
4. Modified internal rate of return
5. Portfolio rate of return
6. Frequency distribution of rates of return

G. Risk evaluation and opportunities for control

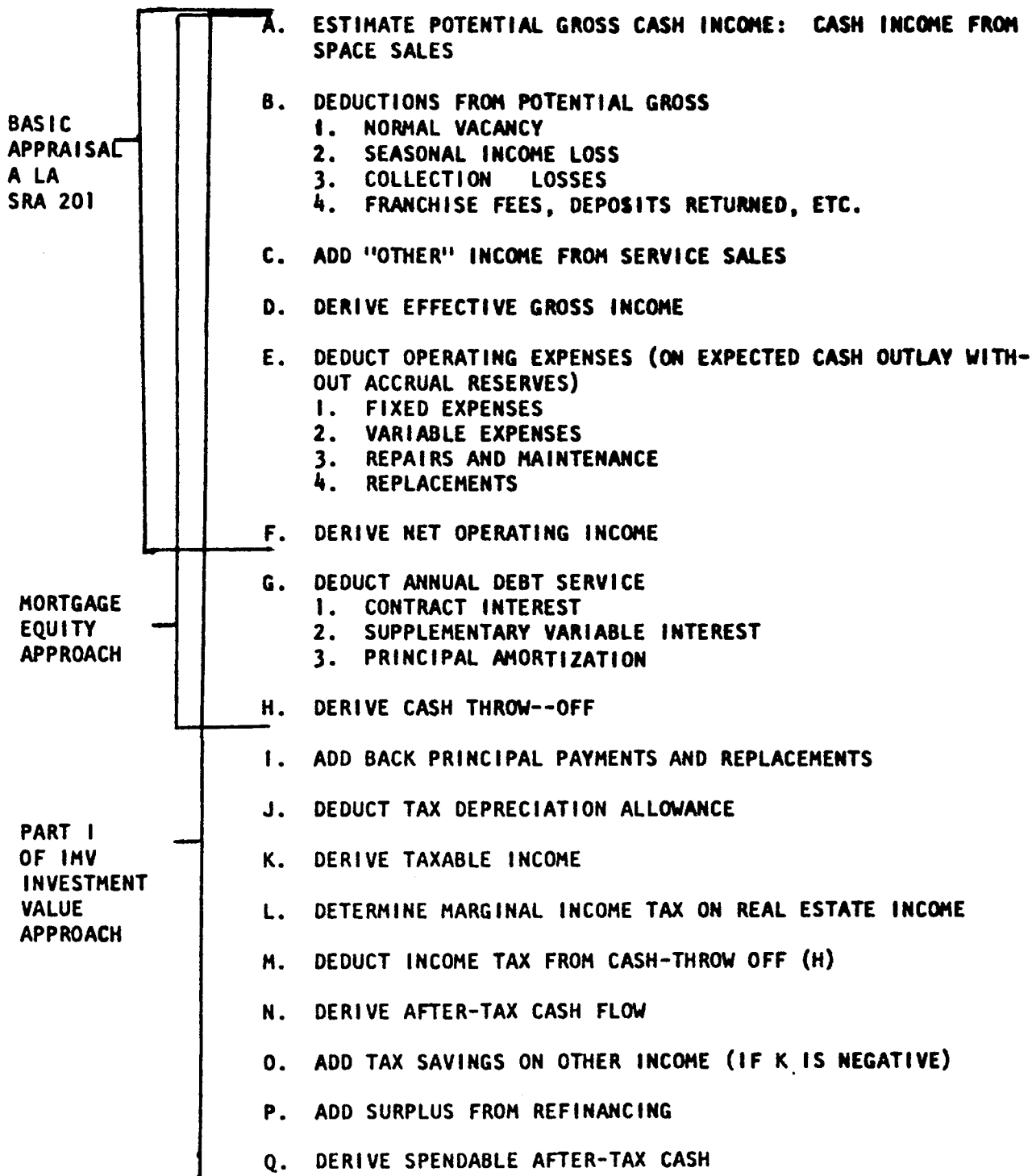
1. Equity payback period
2. Default ratio or cash break-even point
3. Sensitivity point for cost over-run or under-absorption
4. Required market segment as percent of total market opportunity
5. Opportunity to shift financial risks by contract
6. Opportunity to control variance due to management by incentive compensation
7. Matching of profit centers to risks accepted or shifted

#### VI. Pre-architectural programing

- A. The backdoor approach to feasibility is to define the product mix, the rents, the expenses, desired after-tax cash flow, and break-even point in order to define cash available for debt service, amount to be borrowed and therefore the total maximum budget.
- B. Feasibility analysis is an interplay between the non-financial elements of feasibility and the cash flow consequences of that set of assumptions.
- C. The development of density models for financial analysis

**SYSTEMATIC ESTIMATION OF FORECAST ANNUAL INCOME FOR AN INCOME-  
PRODUCING PROPERTY**

**PART I. ANNUAL RETURNS TO INVESTOR**



**PART II. RESALE RETURNS TO INVESTOR (OVER)**

May 1, 1971

**PART II.    RESALE RETURNS TO INVESTOR**

- A.   ESTIMATED RESALE PRICE (EOY)**
- B.   DEDUCT BROKER'S COMMISSION AND OTHER TRANSACTION COSTS**
- C.   DERIVE EFFECTIVE GROSS PROCEEDS FROM SALE**
- D.   DEDUCT ALL CREDIT CLAIMS (EOY) OUTSTANDING**
  - 1.   SHORT AND LONG TERM NOTE BALANCES DUE**
  - 2.   PREPAYMENT PENALTIES**
  - 3.   DEDUCT EQUITY SHARES TO NON-OWNER INTEREST**
- E.   DERIVE PRE-TAX REVERSION TO EQUITY**
- F.   DEDUCT TAX CLAIMS ON OWNERSHIP INTEREST**
  - 1.   DEDUCT CAPITAL GAINS TAX**
  - 2.   DEDUCT INCOME TAX ON DISALLOWED ACCELERATED DEPRECIATION**
  - 3.   DEDUCT SURTAX ON TAXABLE PREFERENTIAL INCOME**
- G.   DERIVE AFTER TAX RESALE PROCEEDS TO INVESTOR**

COMPONENTS	PCT. DEPR	BEGIN USE	USEFUL LIFE	DEPR METHOD	COST	GROSS RENT	EXPENSES	R E TAXES	INCOME TAX RATE	VACANCY RATE	EQUITY DISCOUNT RATE	STAGING YR (0), FACTOR	RATE OF GROWTH OF GROSS RENT	RATE OF GROWTH OF EXPENSES	RATE OF GROWTH OF R E TAXES	RATE OF GROWTH OF PROJECT VALUE	WORKING CAPITAL LOAN RATE	EXTRAORDINARY EXPENSES	COST OF EQUITY CAPITAL
LAND	.00	1	9	3	\$ 40000.	\$ 46080.	\$ 8400.	\$ 9000.	.3000	.0500	.1800	.00	.0200	.0200	.0500	.0100	.0900	\$ 7625.	.1200
BUILDING	1.00	1	35.	3	\$ 165300.														
ELEVATOR	.80	1	9.	3	\$ 12500.														
FURNISHINGS	1.00	1	7.	5	\$ 13200.														
PARKING	.50	1	10.	3	\$ 7200.														
TRANSACTION COST	1.00	1	35.	3	\$ 1800.														
7TH YR REFURBISH	1.00	0	7.	1	\$ 10000.														
TOTAL INITIAL INVESTMENT					\$ 240000.														

CASH EQUITY REQUIRED	1	2	3	4	5	6	7	8	9	10
	45000.	45000.	45000.	45000.	45000.	50000.	50000.	50000.	50000.	50000.

## FINANCING PLAN

FIRST ASSUMED MORTG \$ 180000.

MONTHLY PAYMENT \$ 1477. INTEREST RATE .0775 STARTS 1 ENDS 5 BONUS INTEREST .0000 OF GROSS RENT

	1	2	3	4	5	6	7	8	9	10
PRINCIPAL	3919.	4234.	4574.	4942.	5339.	.	.	.	.	.
INTEREST	13812.	13497.	13157.	12790.	12393.	.	.	.	.	.
BALANCE	176080.	171845.	167270.	162328.	156989.	.	.	.	.	.

SELLERS 2ND MORTG. \$ 15000.

MONTHLY PAYMENT \$ 185. INTEREST RATE .0850 STARTS 1 ENDS 5 BONUS INTEREST .0000 OF GROSS RENT

	1	2	3	4	5	6	7	8	9	10
PRINCIPAL	994.	1082.	1178.	1282.	1396.	.	.	.	.	.
INTEREST	1236.	1148.	1053.	948.	835.	.	.	.	.	.
BALANCE	14005.	12922.	11743.	10460.	9064.	.	.	.	.	.

REFINANCED FIRST \$ 190000.

MONTHLY PAYMENT \$ 1589. INTEREST RATE .0800 STARTS 6 ENDS 10 BONUS INTEREST .0400 OF GROSS RENT

	1	2	3	4	5	6	7	8	9	10
PRINCIPAL	.	.	.	.	.	4016.	4349.	4710.	5101.	5524.
INTEREST	.	.	.	.	.	15054.	14721.	14360.	13969.	13546.
BALANCE	.	.	.	.	.	185983.	181634.	176924.	171822.	166297.

REFURBISH CHATTEL \$ 10000.

MONTHLY PAYMENT \$ 150. INTEREST RATE .0900 STARTS 8 ENDS 10 BONUS INTEREST .0000 OF GROSS RENT

	1	2	3	4	5	6	7	8	9	10
PRINCIPAL	.	.	.	.	.	.	.	938.	1026.	1122.
INTEREST	.	.	.	.	.	.	.	861.	773.	677.
BALANCE	.	.	.	.	.	.	.	9061.	8035.	6913.

	1	2	3	4	5	6	7	8	9	10
GROSS RENT	46080.	47001.	47923.	48844.	49766.	50688.	51609.	52531.	53452.	54374.
LESS VACANCY ALLOWANCE	2304.	2350.	2396.	2442.	2488.	2534.	2580.	2626.	2672.	2718.
EFFECTIVE GROSS INCOME	43776.	44651.	45527.	46402.	47278.	48153.	49029.	49904.	50780.	51655.
LESS REAL ESTATE TAXES	9000.	9450.	9900.	10350.	10800.	11250.	11700.	12150.	12600.	13050.
LESS EXPENSES	16025.	8568.	8736.	8904.	9072.	9240.	9408.	9576.	9744.	9912.
NET INCOME	18751.	26633.	26891.	27148.	27406.	27663.	27921.	28178.	28436.	28693.
LESS DEPRECIATION	11578.	10038.	8847.	7913.	7169.	6565.	6067.	7790.	7178.	6223.
LESS INTEREST	15049.	14646.	14210.	13739.	13229.	17082.	16785.	17323.	16881.	16398.
TAXABLE INCOME	-7876.	1948.	3832.	5495.	7007.	4015.	5068.	3064.	4375.	6071.
PLUS DEPRECIATION	11578.	10038.	8847.	7913.	7169.	6565.	6067.	7790.	7178.	6223.
LESS PRINCIPAL PAYMENTS	4914.	5317.	5753.	6224.	6735.	4016.	4349.	5648.	6127.	6647.
CASH THROW-OFF	-1213.	6669.	6926.	7184.	7441.	30510.	6785.	15206.	5427.	5647.
LESS TAXES	.	584.	1149.	1648.	2102.	1204.	1520.	919.	1312.	1821.
CASH FROM OPERATIONS	-1213.	6084.	5777.	5535.	5339.	29306.	5265.	14287.	4114.	3826.
WORKING CAPITAL LOAN(CUM BALANCE)	1213.	.	.	.	.	.	.	.	.	.
SPENDABLE CASH AFTER TAXES	.	4762.	5777.	5535.	5339.	29306.	5265.	4287.	4114.	3826.
TAX SAVINGS ON OTHER INCOME	2363.	.	.	.	.	.	.	.	.	.
* * * * *										
MARKET VALUE	240000.	242400.	244800.	247200.	249600.	252000.	254400.	266800.	269200.	271600.
BALANCE OF LOANS	191298.	184767.	179014.	172789.	166054.	185983.	181634.	185985.	179858.	173211.
NET WORTH OF PROPERTY	48701.	57632.	65785.	74410.	83545.	66016.	72765.	80814.	89341.	98388.
CAPITAL GAIN	8131.	18662.	29193.	39724.	50255.	60786.	71317.	83277.	95046.	106605.
CAPITAL GAINS TAX	1219.	2799.	4378.	5958.	7538.	9117.	10697.	12491.	14256.	15990.
INCOME TAX ON EXCESS DEPRECIATION	1034.	1606.	1821.	1756.	1467.	997.	378.	.	.	.
* * * * *										
PERCENT INITIAL EQUITY PAYBACK AFTER TAX	.0525	.1583	.2867	.4097	.5283	1.0616	1.1669	1.2527	1.3350	1.4115
NET INCOME-MARKET VALUE RATIO	.0781	.1098	.1098	.1098	.1098	.1097	.1097	.1056	.1056	.1056
RETURN ON NET WORTH BEFORE TAXES	.0552	.3203	.2616	.2403	.2227	.1553	.2050	.3195	.1726	.1644
RETURN ON NET WORTH AFTER TAXES	.0846	.2484	.2280	.2122	.1976	.1430	.1977	.1770	.1591	.1483
CASH RETURN ON ORIG CASH EQUITY BEF TAX	-.0269	.1482	.1539	.1596	.1653	.6102	.1357	.3041	.1085	.1129
CASH RETURN ON ORIG CASH EQUITY AFT TAX	.0525	.1058	.1283	.1230	.1186	.5861	.1053	.0857	.0822	.0765
DEFAULT RATIO	.9763	.8333	.8054	.8029	.8004	.8204	.8185	.8508	.8484	.8461
LENDER BONUS INTEREST RATE	.0000	.0000	.0000	.0000	.0000	.0122	.0110	.0115	.0114	.0120
* * * * *										
PRESENT VALUE OF PROJECT BEFORE TAXES	236272.	241180.	244044.	246091.	247482.	246720.	247239.	254941.	254808.	254543.
PRESENT VALUE OF PROJECT AFTER TAXES	236364.	238649.	240204.	241194.	241709.	240691.	241002.	245953.	245633.	245179.
EQUITY RATE W/ COST OF CAPITAL AT .120	.0846	.1607	.1785	.1825	.1817	.1741	.1716	.1683	.1648	.1615



UNIVERSITY OF WISCONSIN SCHOOL OF BUSINESS  
Real Estate Investment Teaching Model  
February, 1971  
Basic Definitions of Model Outputs

- 1) Current period return on Net Worth before taxes =

$$\frac{\text{Cash Throw-off} + \text{Change in Net Worth}}{\text{Net Worth at End of Previous Year}}$$

- 2) Current period return on net worth after taxes =

$$\frac{\begin{array}{l} \text{Spendable cash} + \text{tax savings on other income} + \\ (\text{Change in net worth} - \text{change in cap. gains tax}) \end{array}}{\text{Net worth at the end of previous year less capital gains tax of previous year}}$$

- 3) Cash return on original cash equity before taxes =

$$\frac{\text{Cash throw-off}}{\text{Total Initial Investment less Initial mortgage debt}} \\ \text{(This is adjusted for staged projects)}$$

- 4) Cash return on original equity cash after taxes =  
(This is adjusted for staged projects)

$$\frac{\text{Spendable Cash after taxes} + \text{Tax savings on other income}}{\text{Total Initial Investment cost less initial mtge. debt}}$$

- 5) Net income - market value ratio

$$\frac{\text{Net Income}}{\text{Market Value for the same period}}$$

- 6) After tax cash recovered - cash equity ratio (payback) =

$$\frac{\text{Accumulated spendable cash after taxes} + \text{accumulated tax savings on other income}}{\text{Cash equity required}}$$

- 7) Default ratio =

$$\frac{\text{Operating Exp.} + \text{R.E. Taxes} + \text{Prin. \& Interest on Mtge.} + \text{Working Cap. Loan Prin. Repayment}}{\text{Gross Income}}$$

8) Lender Bonus Interest Rate =

$$\frac{\% \text{ of effective gross (not to exceed cash throw-off for period)}}{\text{Balance due on loan at beginning of period}}$$

9) Resale Market Value at End of Year

$$\frac{\text{Total Initial Investment Cost} + \text{Additional Staged Investment} \times \text{Index for Year}}{\text{Index for Year}}$$

10) Net worth of property =

$$\text{Market value less balance of loans less working capital loans}$$

11) A. Sales proceeds subject to capital gains tax =

$$\text{Market value} - (\text{Total Capital Investment} - \text{Straight-line depreciation} - \text{Allowed excess depreciation})$$

B. Sales proceeds subject to income tax =

$$\text{Cumulative depreciation taken} - \text{Straight-line depreciation} - \text{Allowed excess depreciation}$$

$$\text{C. Taxes on sale} = (\text{A} \times 1/2 \text{ Income Tax rate}^*) + (\text{B} \times \text{Income Tax Rate})$$

\* Not to exceed 25%

12) Present value of project before taxes =

$$\text{Original mortgage balance} + \text{PV of received stream of cash throw-off} + \text{PV of net worth if sold at end of year indicated by column number.}$$

13) Present value of project after taxes =

$$\text{Original mortgage balance} + \text{present value of received stream of spendable cash after taxes} + \text{PV of received tax savings on other income} + \text{PV of (net worth less capital gains tax) if sold at end of year indicated by column number.}$$

$$14) \text{ Cash Equity Required} = \sum \$ \text{ components utilized} - \sum \text{face value of mortgages in force}$$

15) For each year N (net worth - cap gains tax) +

$$X = \sum_{N=1}^N \left[ (\text{Spendable Cash Aft Taxes} + \text{Tax Savings}) \times (1 + \text{Cost of Equity Cap})^{N-1} \right]$$

$$Y = (\text{LOG}(X) - \text{LOG}(\text{Original Investment})) / N$$

$$\text{Equity Rate} = \text{Exp}(Y) - 1.$$