JAMES A. GRAASKAMP COLLECTION OF TEACHING MATERIALS

V. INDUSTRY SEMINARS AND SPEECHES - SHORT TERM

A. Appraisal Organizations

5. 1973

d. "A Guide to Feasibility Analysis" & "A Guide to Real Estate Investment Analysis" sponsored by AIREA Chapter 5, June 8-9, 1973

Index

A GUIDE TO FEASIBILITY ANALYSIS

A seminar at Los Angeles, California
AIREA Chapter 5, Los Angeles, California
Friday, June 8, 1973

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

MORNING SESSION: 9:00 A.M.

I. Real Estate as an Enterprise and the Management Process

II. Elements of a Total Feasibility Analysis

III. Elements of Financial Feasibility

COFFEE BREAK: 10:30 A.M.

IV. The Concept of Risk

V. Determining Objectives and Criteria of the Client

VI. Structuring Market Data Analysis with Models

LUNCHEON: 12:00 noon

AFTERNOON SESSION: 1:00 P.M.

I. Market Segmentation

II. Identification of Prospective Buyers or Tenants

III. Developing a Customer Profile with a Consumer Survey

IV. Planning and Executing a Consumer Survey

COFFEE BREAK: 2:30 P.M.

V. The Regulatory Context

VI. Presentation of Recommendations--Pre-Architectural Programming

FEASIBILITY ANALYSIS SEMINAR OUTLINE

June 8, 1973
Los Angeles, California

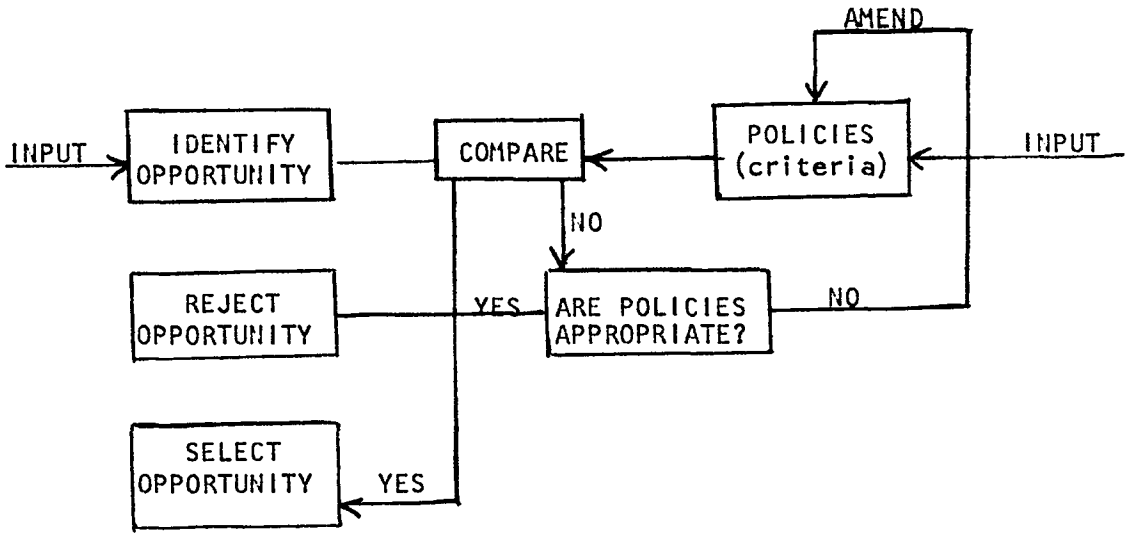
I. Real Estate as an Enterprise and the Management Process

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 concensus 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 concensus 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

II. 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. Analytical point on the time line relative to fixed assumptions and viewpoint of report.

C. Establishing the viewpoint of the reader who will be making a decision on the basis of the report:

1. Strategy of equity vs credit
2. Strategy of owner vs user vs public interest
3. Value-objectives-criteria of viewpoint to be served
4. Profit centers defined within measures of profitability
5. Desirability of supplementary reports

D. 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?

E. A critical interview with the client should reveal:

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

VI. Structuring Market Data Analysis With Models

A. Creating devices which will discard most data and logically relate the rest.

1. Models explain what you are going to do
2. Models explain relationships and key assumptions
3. Models permit client to test his own assumptions for a range of alternative outcomes

B. Demonstration of converting weekend skiing demand to motel room quantities at a specific resort (See illustration - next page)

C. Conversion of highway traffic to historical exhibit admissions (See chart Flow Diagram, page 40)

SKIER MOTEL ROOM DEMAND MODEL

P x R x T x D ÷ PR x MS = 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 Wintergreen 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				

BREAK FOR LUNCH

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 questionaire 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. 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

IV. Planning and Executing a Consumer Survey

A. Review of Landmark questionaire

B. Drafting and testing questions (refer to enclosure number 14, "How's That Again?")

C. Listings vs. cross-tabs

1. Data processing techniques for card punched data
2. Successive subsets of cross-tabs to refine an answer
3. Presentation of open end responses in appendix with question and list of answers

COFFEE BREAK: 2:30 P.M.

V. The Regulatory Context

A. Like purchasing insurance, there are several ways to systematically unravel the problem of exposure to loss relative to regulation of real estate, including regulation on the actors, a check list of available laws, or economic classification of real estate elements.

B. Real estate is a triangle relationship of self-interest of the producer, the consumer and the public interest. The planner serves as marital counselor in this triangle and his bias will reflect the political power structure of his particular constituency.

C. Another way of viewing it today is by the elements of viable real estate with:

1. Land is a public utility and finite resource where decisions are irreversible.
2. Money is a trusteeship and a capital market commodity which is mobile and reversible.
3. Activities housed are temporary social decisions which are volatile.

D. The check list approach should be subdivided among the following:

1. Legal constraints on use of site
2. Legal constraints on the anticipated consumer for space
3. Legal constraints on owner-borrower
4. Legal constraints on creditor-lender

2024 Breese Terrace, Madison, Wisconsin 53705 608 238-6873

November 10, 1971

Landmark Research Inc.

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 <u>one</u> 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 Important	Desirable	Not 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 everyones 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?

☐ Family seasonal
☐ Legal residence

( ) $20,000-24,999
( ) 25,000-29,999
( ) 30,000-34,999
( ) 35,000-39,999
( ) $40,000-44,999
( ) 45,000-49,999
( ) Could pay more 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.

5. Ethical constraints to those affected but outside the decision process

VI. Presentation of Recommendations

A. The decision process first requires identification of alternative courses of action from a mess of information together with an estimate of consequences for each alternative.

B. The decision process also requires recognition of value judgements, conversion of values to explicit objectives, and definition of criteria and relative weights of these criteria.

1. Attribute listings
2. Point systems selections
3. Financial ratios
4. Management policy "screens"

C. Application of criteria to alternatives to select single course of action.

D. Statement of limiting conditions

1. The viewpoint which he represents
2. The critical objectives of the viewpoint represented
3. The elements of the feasibility process provided by others
4. The elements of the feasibility analysis to be researched by the analyst.
5. Explicit assumptions specified by client
6. Explicit release of responsibility for certain segments of a complete feasibility (ie. such as environmental impact or political variables)
7. Risks of economic forecasting
8. Risk of reliability of data provided

E. The investor or decision maker in real estate is operating under conditions of uncertainty and therefore "buys" a set of assumptions rather than a bundle of rights. Many of those assumptions eventually are reduced to dollars over time and that is the subject of tomorrows seminar.

A GUIDE TO REAL ESTATE INVESTMENT ANALYSIS

AIREA Chapter 5, Los Angeles, California
Saturday, June 9, 1973

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

MORNING SESSION: 9:00 A.M.

I. Basic Elements of Real Estate Financial Analysis

II. A Review of Real Estate Appraisal Financial Analysis

III. The Basic Elements of After-Tax Cash Flow Analysis

COFFEE BREAK: 10:30 A.M.

IV. Working through a Basic Problem for an Income Property

LUNCHEON: 12:00 noon

AFTERNOON SESSION: 1:00 P.M.

I. What Is Yield?

II. What Is Risk Analysis?

III. Risk Analysis applied to a Mortgage Loan Application

COFFEE BREAK: 2:30 P.M.

IV. Risk Analysis applied to a Limited Partnership Prospectus

V. Fair Market Value or Investment Value?

VI. Working through a Basic Problem for Land Development Analysis

Outline to
Guide to Real Estate Investment Analysis

MORNING SESSION

I. Basic Elements of Real Estate Financial Analysis

A. The valuation process is a system of models which attempts to predict what a prudent man working for his economic betterment would do.

1. The market comparison approach is a logic model of if/then statements.
2. The cost approach is an aggregation model
3. The income approach is a simulation model

B. Simulation requires forecasting the cash cycle of an enterprise. Basic elements of a cash cycle forecast are:

1. The time-line of financial events for an enterprise
2. Schedules of outlays
3. Schedules of receipts
4. Measures of yield
5. Measures of risk

C. To make forecasting feasible it is necessary to simplify the future transaction pattern to the most important elements. Reducing a problem to basic relationships is called modeling. The basic considerations of a model as to its usefullness are:

1. What prediction or decision needs to be made?
2. What data is available to make it?
3. What theories and assumptions are available to structure the data?
4. What are the limitations of the model user?
5. What are the constraints on communicating the output?
6. What is the cost/benefit ratio of using the model?

D. The types of financial modeling decisions typically found in financial analysis are:

1. Economic allocation of all resources
2. Acceptance or rejection of a specific investment opportunity
3. Identification of the optimal combination of ingredients for a profitable opportunity
4. Sensitivity analysis of relationship of financial success to specific variables
5. Trade-off decision
6. Measuring tolerance for and probability of surprise (risk)

E. Comparison of critical assumptions for two investment valuation models or viewpoints in real estate:

1. The traditional income appraisal began with an economic model intended to best allocate the country's investment in capital improvements and land. (See Illustration 1, Col. A)

2. The Ellwood valuation model began with the need to accept or reject mortgage loan applications and a correlary question of how much to lend on acceptable properties. (Illustration 1, Col.B)

F. When the viewpoint changes from valuation of a property for a mortgage commitment to an equity commitment the assumptions from the Ellwood approach become too simple, too far removed from reality to be a useful model.

1. The question for the equity investor is which investment has the best probability of maximizing his net spendable cash in the future and his total accumulation of net worth over time with an acceptable level of risk and hassle.
2. Illustration 1, Col. C summarizes the assumptions of modern capital budget decision models.
3. Notice that it is no longer possible to have a single NOI in the numerator or in some cases, a single capitalization rate in the denominator. It will be necessary to do some accounting period by period.

G. Modern money management therefore requires the following inputs to a financial forecast and investment strategy.

1. The time line for significant financial events
2. A schedule and amount of outlays for each period

    a. Capital outlays
    b. Expense outlays
    c. Debt service outlays
    d. Tax outlays

3. A schedule and amounts of receipts for each period

    a. Operating revenues
    b. Sales proceeds
    c. Borrowed funds
    d. Derivative receipts or savings

4. Measures of yield

    a. Periodic dollars of profit
    b. Periodic return in dollars invested
    c. Average periodic return on total resources
    d. Total cumulative dollar increase in net worth

5. Measures of risk

    a. Capacity for absorbing surprise
    b. Range of variation in alternative outcomes
    c. Definition of maximum loss

II. Basic Money Management Theory

A. A real estate purchase is a capital budgeting decision and yet real estate professional societies teach capitalization as if the state of the arts was still the same as it was in 1935. To understand investment analysis is only necessary to calssify an investment as to type and the decision to be made.

B. Investment money managers distinguish between a conventional investment and a non-conventional investment by the pattern of outlays and receipts. Investment theory presumes outlays occur at the beginning of a period and proceeds are earned at the end of each period. A period is generally one year but might be a quarter or a month.

1. A conventional investment has one or more periods of outlays followed by one or more periods of positive cash proceeds. Negative cash proceeds (losses) are treated as outlays.

2. A non-conventional investment has one or more periods of outlays interspersed with periods of positive cash flows.

C. Assuming risk to be equal investment decisions attempt to provide a standard for choosing between alternative investment (courses of action) based on yield.

1. For an investor with relatively unlimited funds and opportunities, such as an insurance company, the problem is to make accept or reject decisions for many independent investments, generally accepting each if yield is greater than some minimum acceptable rate of discount.

   a. Substitution theory and the cost of money
   b. Ellwood theory began as device to screen loan submissions

2. Some investors have only enough money for a single site with which to make one investment and they are interested in shaping that investment to make the best profit possible within an acceptable limit of risk. A plant location problem where many sites may be profitable but where one site would be most profitable and only one plant would be built. Or there are engineering decisions to trade off one feature for another such as central air conditioning with higher rents, lower annual costs but higher initial investment as opposed to window air conditioners with average rents, higher depreciation, more responsibility and cost shifted to the tenant and higher finance charges. Such decisions are mutually exclusive, its one or the other.

   a. Yield methods may give less accurate rankings for mutually exclusive decisions because they reflect average rather than incremental cash flows.
   b. Mutually exclusive investments often involve marginal revenue versus marginal investment issues.

COMPARISON OF CRITICAL ASSUMPTIONS FOR THREE VALUATION MODELS OR VIEWPOINTS IN REAL ESTATE

By Professor James A. Graaskamp

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

D. Your appraisal training has already given you some introduction to the problem of defining what is profit and what is recapture of capital and therefore ranking of investments.

1. Straight line allocates earnings without recognition of a reinvestment rate and produces the lowest value.

2. Hoskold uses a sinking fund factor to recognize reinvestment at a safe rate and therefore releases more proceeds to income and produces a higher value than straight line approach.

3. Inwood defines reinvestment to be the same as a discount rate, therefore requiring smaller sinking fund amounts and releasing more to income thereby generating the highest value for the investment.

E. The ranking of alternative investments depends on a definition of yield and works best for pairs of alternatives and disintegrates as the number of alternatives increases. It will be shown by the end of the morning that an investment will be judged by a combination of yield factors in order to correctly define the investment from the standpoint of risk, the cost of money plans for use of the profits, and the viewpoint of the investor. Consider the following alternative measures of yield relative to four investments.

		Net Cash Proceeds Per Year	
Investment	Initial Cost	Year 1	Year 2
A	$10,000	$10,000	
B	10,000	10,000	$1,100
C	10,000	3,762	7,762
D	10,000	5,762	5,762

THE PAYBACK PERIOD

Investment	Payback Period (years)	Ranking
A	1	1
B	1	1
C	1.8	4
C	1.7	3

AVERAGE INCOME ON BOOK VALUE

Investment	Average Proceeds	Average Depreciation*	Average Income (Proceeds less Depreciation)	Average Book† Value	Income on Book Value,%	Ranking
A	$10,000	$10,000	$ 0	$5,000	0	4
B	5,550	5,000	550	5,000	11	3
C	5,762	5,000	762	5,000	15	1
D	5,762	5,000	762	5,000	15	1

* Assuming straight line depreciation, † investment divided by two.

AVERAGE INCOME ON COST

Investment	Cost	Average Income	Ave. Income on Cost,%	Ranking
A	$10,000	$ 0	0	4
B	10,000	550	5.5	3
C	10,000	762	7.6	1
C	10,000	762	7.6	1

PRESENT VALUE OF THE INVESTMENT Rate of Interest: 30%

Investment	Present Value of Proceeds	Present Value of Outlay	Net Present Value	Ranking
A	$ 9,450	$10,000	$ -570	4
B	10,413	10,000	+413	3
C	10,457	10,000	+457	2
D	10,564	10,000	+564	1

PRESENT VALUE OF THE INVESTMENT Rate of Interest: 30%

Investment	Present Value of Proceeds	Present Value of Outlay	Net Present Value	Ranking
A	$7,692	$10,000	$ -2,308	3
B	8,343	10,000	-1,657	1
C	7,487	10,000	-2,513	4
D	7,842	10,000	-2,158	2

SUMMARY OF RANKING

Measure of Investment Worth	A	B	C	D
Payback Period	1*	1*	4	3
Average Income on Book Value or Cost	4	3	1*	1*
Present Value: at 6%	4	3	2	1
at 30%	3	1	4	2

* Indicates tie between two investments

INCREMENTAL BENEFITS

Investment	Year	Cash Flows: Outlays	Cash Flows: Proceeds	Yield,%	Net Present Value at 5%
Y	0	$100.00		20	$27.89
	1		$20.00		
	2		120.00		
	0	100.00		25	23.58
	1		100.00		
	2		31.25		

Investment	0	1	2	Present-Value Index
X	$ -1,500	$1,000	$1,000	1.16
Y	-3,100	2,000	2,000	1.12

Investment	0	1	2	Present-Value Index
Y - X	$ -1,600	$1,000	$1,000	1.08

F. The real estate appraiser is generally familiar with investment decisions using a net present value method for decision making. Note that this method requires assuming a discount rate (9% in example below) and a stream of benefits and the object is to compute the maximum justified investment. Example:

An Income Property Costing $50,000 (PVO) Will Have the Following Cash Flows:

Year 1	$2,000 Income
Year 2	5,000 Income
Year 3	5,100 Income
Year 4	5,200 Income
Year 5	55,000 Income and Reversion

At 9% What is the Net Present Value (NPV) of the Property?

	Amount	P.V. Factor at 9%	P.V. Benefits (PVB)
Year 1	2,000	.9174	$ 1,834
Year 2	5,000	.8417	4,209
Year 3	5,100	.7722	3,938
Year 4	5,200	.7084	3,684
Year 5	55,000	.6499	35,745
			$49,410

PVB - PVO = NPV

$49,410 - $50,000 = -$590

CONCLUSION: Do Not Buy the Project

G. Many corporations wish to solve for yield when they know the outlay and they know the stream of benefits. The measure of yield which they use is the internal rate of return (IRR). The internal rate is that rate which makes net present value (NPV) equal to 0 or PVB equal to PVO. For example:

An Income Property Costing $20,000 Will Have the Following Cash Flows:

Year 1	2,000	Income
Year 2	3,000	Income
Year 3	3,000	Income
Year 4	3,500	Income
Year 5	20,000	Income and Reversion

Net Present Value at 11%

	Amount	P.V. Factor at 12%	P.V. Benefits (PVB)
Year 1	2,000	.8929	1,785.80
Year 2	3,000	.7972	2,391.60
Year 3	3,000	.7118	2,135.40
Year 4	3,500	.6355	2.224.25
Year 5	20,000	.5674	11,348.00
			19,885.05

PVB - PVC = NPV

$19,885.05 - 20,000 = 114.95

Net Present Value at 11.8375017151%

	Amount	P.V. Factor at 11.8375017151%	P.V. Benefits (PUB)
Year 1	2,000	.89415445	1788.3089
Year 2	3,000	.79951218	2398.5365
Year 3	3,000	.71488738	2144.6621
Year 4	3,500	.63921973	2237.2691
Year 5	20,000	.57156117	11431.2234
			20,000.0000

PVB - PVC = NPV

20,000 - 20,000 = 0

Internal Rate of Return (IRR): That Rate Which Makes NPV = 0
or PVB - PVC

IRR = 11.8375017151

H. Many institutions, however, feel that the internal rate of return is misleading or inappropriate for reasons particularly relevant to real estate.

1. The internal rate or Inwood discounting assumes that capital recapture is reinvested immediately at the same rate at which you are discounting. (Reinvestment rate)

2. More investments today are non-conventional - a series of outlays insterspersed with a series of returns and IRR cannot be computed by interpolation and algebraically the equation would have as many roots as there was a change in direction in net outlays per period versus net receipts.

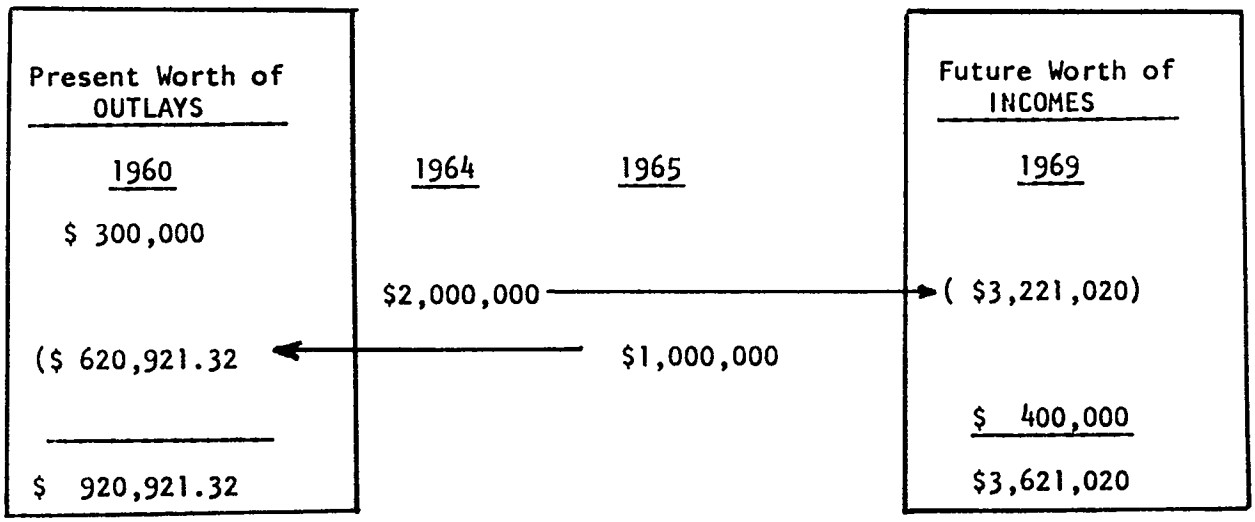
3. Equity investment does not occur on a continual basis but rather at erratic points in time and much equity money is qualified as limited partnership money, money raised by a public offering of stock, or participations as a condition of a loan with the result that the cost of money changes significantly over time and with the size of the project. Thus both the cost of capital and the reinvestment rate available for proceeds may differ from the yield on a specific investment.

I. The result that has been that development of what is called the modified internal rate of return (MIR). In MIR you first determine the present value of a series of outlays by discounting at the opportunity cost of capital. You then compound receipts forward to the end of a forecast period at the reinvestment rate. Having determined the present value of the outlay and the future compound value of the receipts, it is possible to solve for the internal rate of return. Consider the following example:

Suppose we have the following outlays and incomes:

OUTLAYS:	Jan. 1, 1960	$ 300,000
	Jan. 1, 1965	1,000,000
INCOMES:	Jan. 1, 1964	2,000,000
	Jan. 1, 1969	400,000

and the cost of capital rate is 10% p.a. compounded annually.



$320,321.32 (1 + i)^9 = 3,621,020.00 = 16.43%

III. Basic Elements of After Tax Cash Flow Analysis

A. There are four kinds of benefit dollars available from investment in real estate.

1. Cash from operations at the income tax rate
2. Cash from sales at the capital gains rate
3. Cash from surplus due to refinancing (non-taxable)
4. Cash from tax savings on other taxable income

B. It is desirable to have a systematic method of classifying periodic returns and capital reversions from real estate on a pre-tax and after tax basis. (See outline)

C. It is useful to use a sample case to see how each element of cash flow is computed and the schedules necessary to support such a presentation. (See attached sample case)

IV. Working Through a Basic Problem for an Income Property With a Simple Computer Model

A. Busy work computations are the type of thing computers do best and Mini-Mod is an example of a central teaching model. There are many superior computer models which you can use for your client in your office by means of computer terminals. That is what EDUCARE is all about.

B. A purchase and remodel problem (See "Analysis for Purchase of Apartment House Investment").

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

PART I. ANNUAL RETURNS TO INVESTOR

BASIC APPRAISAL A LA SRA 201

A. ESTIMATE POTENTIAL GROSS CASH INCOME: CASH INCOME FROM SPACE SALES

B. DEDUCTIONS FROM POTENTIAL GROSS
   1. NORMAL VACANCY
   2. SEASONAL INCOME LOSS
   3. COLLECTION LOSSES
   4. FRANCHISE FEES, DEPOSITS RETURNED, ETC.

C. ADD "OTHER" INCOME FROM SERVICE SALES

D. DERIVE EFFECTIVE GROSS INCOME

E. DEDUCT OPERATING EXPENSES (ON EXPECTED CASH OUTLAY WITHOUT ACCRUAL RESERVES)
   1. FIXED EXPENSES
   2. VARIABLE EXPENSES
   3. REPAIRS AND MAINTENANCE
   4. REPLACEMENTS

F. DERIVE NET OPERATING INCOME

MORTGAGE EQUITY APPROACH

G. DEDUCT ANNUAL DEBT SERVICE
   1. CONTRACT INTEREST
   2. SUPPLEMENTARY VARIABLE INTEREST
   3. PRINCIPAL AMORTIZATION

H. DERIVE CASH THROW--OFF

I. ADD BACK PRINCIPAL PAYMENTS AND REPLACEMENTS

J. DEDUCT TAX DEPRECIATION ALLOWANCE

PART I OF IMV INVESTMENT VALUE APPROACH

K. DERIVE TAXABLE INCOME

L. DETERMINE MARGINAL INCOME TAX ON REAL ESTATE INCOME

M. DEDUCT INCOME TAX FROM CASH-THROW OFF (H)

N. DERIVE AFTER-TAX CASH FLOW

O. ADD TAX SAVINGS ON OTHER INCOME (IF K IS NEGATIVE)

P. ADD SURPLUS FROM REFINANCING

Q. DERIVE SPENDABLE AFTER-TAX CASH

PART II. RESALE RETURNS TO INVESTOR (OVER)

J. Graaskamp

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

V. A SAMPLE CASE

Valuation of a Real Estate Investment Involving Net Rental Variations, Leverage Accelerated Depreciation, Investor Tax Considerations and Price Appreciation

The following real estate investment analysis focuses on a property where the factors of increasing net rentals, leverage, accelerated depreciation, investor tax considerations, and price appreciation all have an important bearing on the property's total investment value. The property analysis incorporates the following assumptions:

(a) First year gross annual income of $140,000 increases by 3% per year for 10 years.

(b) Vacancy allowance is assumed to be 5% of gross income.

(c) Real estate taxes are $10,000 for the first year and increase at a rate of 2% per year.

(d) Expenses are $60,000 for the first year and increase at a rate of 3% per year.

(e) The total cost of the project is $950,000. Improvements are valued at $700,000. Land is valued at $250,000.

(f) Mortgage debt of $600,000 is available. This debt is to be amortized at 8% with annual payments of $54,000.

(g) The improvements will be depreciated through the use of the double declining balance method; the economic life of the improvements is 40 years.

(h) The project value is expected to grow at 3% per year.

(i) The investor's marginal income is taxed at 50%.

(j) An after-tax return on equity investment of 12% is sought.

(k) Capital gains on the sale of the property are taxed at 25%.

Schedule I
Present Value of Spendable Cash After Taxes
And Tax Savings On Other Income

	1	2	3	4	5
Gross Rent	140,000	144,200	148,400	152,600	156,800
Less Vacancy Allowance	7,000	7,210	7,420	7,630	7,840
Effective Gross Income	133,000	136,990	140,980	144,970	148,960
Less Real Estate Taxes	10,000	10,200	10,400	10,600	10,800
Less Expenses	60,000	61,800	63,600	65,400	67,200
Net Income	63,000	64,990	66,980	68,970	70,960
Less Depreciation	35,000	33,250	31,588	30,008	28,508
Less Interest	48,000	47,520	47,002	46,442	45,837
Taxable Income	-20,000	-15,780	-11,610	- 7,480	- 3,385
Plus Depreciation	35,000	33,250	31,588	30,008	28,508
Less Principal Payments	6,000	6,480	6,998	7,558	8,163
Cash Throw-off	9,000	10,990	12,980	14,970	16,960
Less Taxes	-	-	-	-	-
Cash From Operations	9,000	10,990	12,980	14,970	16,960
Working Capital Loan (Cum Bal)	-	-	-	-	-
Spendable Cash After Taxes	9,000	10,990	12,980	14,970	16,960
Tax Savings on Other Income	10,000	7,890	5,805	3,740	1,693
Spendable Cash After Taxes Plus Tax Savings on Other Income	19,000	18,880	18,785	18,710	18,653
P. V. Factor @ 12%	.8929	.7972	.7118	.6355	.5674
Present Value of Spendable Cash After Taxes plus Tax Savings on other Income	16,965	15,051	13,371	11,890	10,584

6	7	8	9	10
161,000	165,200	169,400	173,600	177,800
8,050	8,260	8,470	8,680	8,890
152,950	156,940	160,930	164,920	168,910
11,000	11,200	11,400	11,600	11,800
69,000	70,800	72,600	74,400	76,200
72,950	74,940	76,930	78,920	81,910
27,082	25,728	24,418	23,221	22,059
45,184	44,479	43,717	42,894	42,006
684	4,733	8,795	12,805	16,845
27,082	25,728	24,418	23,221	22,059
8,816	9,521	10,283	11,106	11,994
18,950	20,940	22,930	24,920	26,910
342	2,366	4,398	6,403	8,423
18,608	18,574	18,544	18,517	18,488
-	-	-	-	-
18,608	18,574	18,544	18,517	18,488
18,608	18,574	18,544	18,517	18,488
.5066	.4523	.4039	.3606	.3220
9,427	8,401	7,490	6,677	5,953

Depreciation, Mortgage Interest, Mortgage Principal, and Market Value Data

Depreciation										
	700000	665000	631750	600162	570154	541646	514564	488836	464418	441197
	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05
	35000	33250	31588	30008	28508	27082	25728	24418	23221	22059
Mortgage										
	600000	594000	587520	580522	572964	564801	555985	546464	563181	523075
	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08
Interest	48000	47520	47002	46442	45837	45184	44479	43717	42894	42006
Principal	6000	6480	6998	7558	8163	8816	9521	10283	11106	11994
Total	54000	54000	54000	54000	54000	54000	54000	54000	54000	54000
Market Value										
	950000	978500	1007000	1035500	1064000	1092500	1121000	1149500	1178000	1206500

Schedule II
Total Investment Value of
A Real Estate Project

Total Present Value of Spendable Cash After Taxes plus Tax Savings on Other Income at 12% (Schedule I)				$105,809
Present Value of Net Proceeds From Sale of Property				
Total Sales Price			$1,206,500	
Less:				
Taxes on Sale of Property				
Capital Gains Tax	$113,168			
Income Tax	42,345	$155,513		
Unpaid Mortgage Balance		513,081	668,594	
			537,906	
Present Value Factor (12%)			.3220	173,206
Total Present Value of Equity Investment				$279,015
Original Mortgage Balance				$600,000
Total Project Value				$879,015

Example of Computing Taxes on Sale of Property

Assumptions:

(a) Property held 10 years (120) months
(b) Basis equal to $669,138 (original basis equal to $950,000)
(c) Sales price equal to $1,206,500
(d) Depreciation taken on improvements of $700,000 equal to $280,862
(e) Had depreciation been taken on a straight line basis, depreciation would have been equal to $175,000
(f) Taxpayer is in the 50% bracket

Procedure for Determination of Tax:

Total Gain Subject to Tax: $537362	
Portion Subject to Capital Gains Tax:	
Increase in property value	$256,500
Amount which would have been taken through straight line depreciation	$175,000
Allowable accelerated depreciation (280,862-175,000) x .20	$ 21,172
	$452,672
Portion Subject to Ordinary Income Tax:	
Non-allowable Accelerated Depreciation (280,862-175,000) x .80	84,690
	$537,362
Capital Gains Tax ($452,672 x .25)	$113,168
Income Tax ($84,690 x .50)	42,345
Total Taxes on Sale	$155,513

UNIVERSITY OF WISCONSIN
Real Estate Investment Teaching Model
Demonstration Case Study #2

ANALYSIS FOR PURCHASE OF APARTMENT HOUSE INVESTMENT

1. Assume you wish to analyze the investment value at alternative purchase prices of a 24 unit apartment building, located at 2575 University Avenue, Madison, Wisconsin. The building has twelve two-bedroom apartments that each rent furnished for $140 per month and twelve one-bedroom apartments that rent each for $125 per month. The building is five years old, unfurnished, in need of maintenance and available as is for about $225,000.

2. The building is well located and vacant land in the area is selling for about $1700 per unit. This means that $40,000 of the purchase price could be designated as land value. In addition to the land and building, the purchase price could be allocated to include $12,500 for the elevator and $7,200 to the parking stalls.

3. Market analysis indicates that the building would rent very well if all the units were carpeted and furnished. For this work it is estimated that it would cost $600 per two-bedroom unit and $500 for each one-bedroom unit or a total investment of $13,200 by the prospective buyer.

4. The total capital expenditures could be allocated for depreciation purposes as follows, keeping in mind that the prospect would be a second user and therefore only entitled to a maximum of 125% declining balance except for his new investment in furnishing. The percent depreciable and the number of years of remaining useful life are reasonable estimates given some knowledge of the practices of the Internal Revenue Service and the condition of the building:

Land	$40,000	no depreciation allowed		
Parking	7,200	50%	10 yrs.	125%
Elevator	12,500	90%	12 yrs.	125%
Building	165,300	100%	35 yrs.	125%
Furnishings	13,200	100%	7 yrs.	sum of digits
Transaction costs	1,800	100%	35 yrs.	125%

5. After completion of repairs and refurbishing it is anticipated that the two-bedroom apartments will rent for $170 a month and the one-bedrooms $150 per month. The gross rent roll of the building would then be:

$$\$170 \times 12 \times 12 = 24,480$$

$$\$150 \times 12 \times 12 = \underline{21,600}$$

$$\$ \ 46,080$$

6. During the first year of changeover in ownership, refurbishing and re-leasing you estimate that each unit will be vacant about two months, that is about one-sixth of the time, (i.e. a vacancy of 17%) so that your average occupancy will

APARTMENT CASE STUDY #2

be 83% of potential for the first year. Thereafter you anticipate a normal vacancy rate of 5%, or an occupancy of 95%. Thus first year extra expenses include an additional 12% of future gross for rental losses.

7. The current real estate and personal property taxes to be paid in the first year following purchase are estimated to be $9,000. The normal current operating expenses, excluding real estate taxes but including management fees, are determined to be $8,400.

8. The property has been poorly maintained and will require additional expenditures of $2100 in the first year to justify the new rent schedule. This deferred maintenance charge will be added to the extra operating expenses of the first year washing it out as a tax deductible expense.

9. The buyer is considering this property because his accountant suggested that with his 30% tax bracket, including state and federal taxes, he should look for some tax shelter to offset some of his other current income. Using the accelerated method of depreciation, this real estate project should satisfy this requirement.

10. The investor feels that while the normal ratio of market value to income in his community ranges between 8% and 11%, proper financing should raise the pre-tax yield on his cash equity to at least 18%. The accountant suggests that if the investor considers the cash saved on deferred income taxes due to depreciation, the investor should seek at least 18% to 22% on his investment annually on an after-tax basis. His opportunity cost is 12% as that is his common stock return including capital gains.

11. The financing available to the investor would initially combine the assumption of a first mortgage with a balance of $180,000 with 240 months to run and a second mortgage taken back by the seller to be repaid in ten years, in monthly payments. The investor would plan to refinance both loans at the end of the sixth year of ownership when the prepayment penalty would lapse on the first mortgage. The seller feels he should receive $1000 as points on the second mortgage since that is the discount he will take when he sells the note.

1st Mortgage	180,000	20 year 5 year balloon	7 3/4%
Private loan	15,000	10 year 5 year balloon	8 1/2% $1000 discount

12. While the seller will pay for title insurance, a survey, and related items the buyer expects to pay about $800 in professional appraisal and legal fees related to this transaction. These fees plus points in #11 equal transaction costs of $1800 which increase original cash required and must be amortized over life of structure.

13. Temporary cash deficits at the end of any month can be covered with bank notes at a rate of 9% per annum and repaid out of positive cash flows when available.

UNIVERSITY OF WISCONSIN SCHOOL OF BUSINESS

Real Estate Investment Teaching Model

February, 1971

Card 1

Student's Name	Last 2 Digits of Social Security #	Course & Section #'s	Equity Discount Rate	Income Tax Rate	# Cards #3	# Cards #4
MORTGAGE BANKERS SCH	[redacted]	- [redacted]	.1800	.3000	[redacted]	4

Card 2

Project Description	Extraordinary Expenses	Cost of Equity Capital	Staging Multiplier	Staging Year
24 UNIT APT - CASE 2	7625	.1200	.	

Card 3

Component Description	Original Cost	Percent Depreciable	Depreciation Method	Starting Year	Useful Life
LAND	40000	0.0000	.	00	00
BUILDING	165300	1.0000	.	03	35
PARKING	7200	0.5000	.	03	10
FURNISHINGS	13200	1.0000	.	07	07
ELEVATOR	12500	0.8000	.	03	12
TRANSACTION COST	1800	1.0000	.	03	35
7TH YR REFURBISHING	10000	1.0000		01	07

Card 4

Mortgage Description	Principal Amount	Monthly Payment	Interest Rate	Bonus Interest Rate	Start	End	Term	Refinanced By Mortgage #
FIRST ASSUMED MORTG.	180000		.0775	.	01	05	20	03
SELLERS 2ND MORTG.	15000		.0850	.	01	05	10	05
REFINANCED FIRST	190000		.0800	0.0400	06	10	20	
REFURBISH CHATTEL	10000	150	.0900	.	08	10		

APARTMENT CASE STUDY #2

14. The financial plan is to maintain a highly leveraged position and therefore payoff the original loans at the end of the fifth year by obtaining a new mortgage. To discover some measure of influence of such refinancing on yield to equity and cash flows, the investor will assume that in five years the best loan he could obtain would equal $190,000 for 20 year term at 8$ interest. The age of the building at that time would require granting a bonus interest feature equal to 4% of gross rent as of the beginning of sixth year when the loan begins.

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 =

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

2) Current period return on net worth after taxes =

Spendable cash + tax savings on other income +

$$\frac{\text{(Change in net worth - change in cap. gains tax)}}{\text{Net worth at the end of previous year less capital gains tax of previous year}}$$

3) Cash return on original cash equity before taxes =

$$\frac{\text{Cash throw-off}}{\text{Total initial investment less initial mortgage debt}}$$

(This is adjusted for staged projects)

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

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

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) =

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

7) Default ratio =

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

UNIVERSITY OF WISCONSIN SCHOOL OF BUSINESS

Real Estate Investment Teaching Model

February, 1971

Card Type 5

Gross Rent	Expenses	Rental Growth Rate	Expense Growth Rate
46080	8400	.0200	.0200

Card Type 6

R E Taxes	R E Tax Growth Rate	Project Value Rate of Growth
9000	.0500	.0100

Card Type 7

Vacancy Rate	Working Capita Loan Interest Rate
.0500	.0900

To code Depreciation Method, use the following code no's.

0 = no depreciation
1 = sum of the digits
2 = straight line depreciation
3 = 125% declining balance
4 = 150% declining balance
5 = 200% declining balance

HAVE YOU CHECKED CARD 1 COLS. 61 and 64?

COMPONENTS	PCT. DEPR	BEGIN USE	USEFUL LIFE	DEPR METHOD		COST
LAND	.00	1	.	0	$	40000.
BUILDING	1.00	1	35.	3	$	165300.
PARKING	.50	1	10.	3	$	7200.
FURNISHINGS	1.00	1	7.	1	$	13200.
ELEVATOR	.80	1	12.	3	$	12500.
TRANSACTION COST	1.00	1	35.	3	$	1800.
7TH YR REFURBISH	1.00	8	7.	1	$	10000.
TOTAL INITIAL INVESTMENT					$	240000.

GROSS RENT	$ 46080.	RATE OF GROWTH OF GROSS RENT	.0200		
EXPENSES	$ 8400.	RATE OF GROWTH OF EXPENSES	.0200		
R E TAXES	$ 9000.	RATE OF GROWTH OF R E TAXES	.0500		
INCOME TAX RATE	.3000	RATE OF GROWTH OF PROJECT VALUE	.0100		
VACANCY RATE	.0500	WORKING CAPITAL LOAN RATE	.0900		
EQUITY DISCOUNT RATE	.1800	EXTRAORDINARY EXPENSES	$ 7625.		
STAGING YR(0),FACTOR	.00	COST OF EQUITY CAPITAL	.1200		

	1	2	3	4	5	6	7	8	9	10
CASH EQUITY REQUIRED	45000.	45000.	45000.	45000.	45000.	70000.	70000.	70000.	70000.	70000.

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 $ 170000.
MONTHLY PAYMENT $ 1421. INTEREST RATE .0800 STARTS 6 ENDS 10 BONUS INTEREST .0400 OF GROSS RENT

	1	2	3	4	5	6	7	8	9	10
PRINCIPAL	.	.	.	.	.	3593.	3891.	4214.	4564.	4943.
INTEREST	.	.	.	.	.	13470.	13171.	12848.	12499.	12120.
BALANCE	.	.	.	.	.	166406.	162515.	158300.	153736.	148792.

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.

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

Total Initial Investment Cost + Additional Staged Investment X Index for Year

10) Net worth of property =

Market value less balance of loans less working capital loans

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

Market value - (Total Capital Investment - Straight-line depreciation - Allowed excess depreciation)

B. Sales proceeds subject to income tax =

Cumulative depreciation taken - Straight-line depreciation - Allowed excess depreciation

C. Taxes on sale = (A X 1/2 Income Tax rate*) + (B X Income Tax Rate)
* Not to exceed 25%

12) Present value of project before taxes =

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

13) Present value of project after taxes =

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

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

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

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

Y = (LOG (X) - LOG (Original Investment)/N

Equity Rate = Exp (Y) - 1.

	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	11469.	10537.	9640.	8775.	7940.	6762.	5942.	7729.	7144.	6571.
LESS INTEREST	15049.	14646.	14210.	13739.	13229.	15497.	15236.	15812.	15411.	14972.
TAXABLE INCOME	-7768.	1449.	3039.	4633.	6236.	5403.	6742.	4637.	5880.	7149.
PLUS DEPRECIATION	11469.	10537.	9640.	8775.	7940.	6762.	5942.	7729.	7144.	6571.
LESS PRINCIPAL PAYMENTS	4914.	5317.	5753.	6224.	6735.	3593.	3891.	5152.	5590.	6065.
CASH THROW-OFF	-1213.	6669.	6926.	7184.	7441.	21582.	8793.	17213.	7434.	7655.
LESS TAXES	.	434.	911.	1390.	1870.	1620.	2022.	1391.	1764.	2144.
CASH FROM OPERATIONS	-1213.	6234.	6014.	5794.	5570.	19961.	6770.	15822.	5670.	5510.
WORKING CAPITAL LOAN(CUM BALANCE)	1213.	.	.	.	.	.	.	.	.	.
SPENDABLE CASH AFTER TAXES	.	4911.	6014.	5794.	5570.	19961.	6770.	5822.	5670.	5510.
TAX SAVINGS ON OTHER INCOME	2330.	.	.	.	.	.	.	.	.	.

* *

	1	2	3	4	5	6	7	8	9	10
MARKET VALUE	240000.	242400.	244800.	247200.	249600.	252000.	254400.	266800.	269200.	271600.
BALANCE OF LOANS	191298.	184767.	179014.	172789.	166054.	166406.	162515.	167362.	161771.	155706.
NET WORTH OF PROPERTY	48701.	57632.	65785.	74410.	83545.	85593.	91884.	99437.	107428.	115893.
CAPITAL GAIN	7853.	18106.	28359.	38613.	48866.	59119.	69373.	81055.	92566.	103922.
CAPITAL GAINS TAX	1177.	2715.	4253.	5791.	7329.	8867.	10405.	12158.	13884.	15588.
INCOME TAX ON EXCESS DEPRECIATION	1084.	1890.	2426.	2702.	2729.	2401.	1828.	1362.	772.	57.

* *

	1	2	3	4	5	6	7	8	9	10
PERCENT INITIAL EQUITY PAYBACK AFTER TAX	.0517	.1609	.2946	.4233	.5471	.6369	.7336	.8168	.8978	.9765
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	.2828	.1762	.2695	.1551	.1500
RETURN ON NET WORTH AFTER TAXES	.0837	.2476	.2280	.2132	.1993	.2830	.1627	.1517	.1457	.1400
CASH RETURN ON ORIG CASH EQUITY BEF TAX	-.0269	.1482	.1539	.1596	.1653	.3083	.1256	.2459	.1062	.1093
CASH RETURN ON ORIG CASH EQUITY AFT TAX	.0517	.1091	.1336	.1287	.1237	.2851	.0967	.0831	.0810	.0787
DEFAULT RATIO	.9763	.8339	.8054	.8029	.8004	.7808	.7796	.8126	.8109	.8092
LENDER BONUS INTEREST RATE	.0000	.0000	.0000	.0000	.0000	.0122	.0124	.0129	.0127	.0134

* *

	1	2	3	4	5	6	7	8	9	10
PRESENT VALUE OF PROJECT BEFORE TAXES	236272.	241180.	244044.	246091.	247482.	250665.	250564.	252753.	252195.	251580.
PRESENT VALUE OF PROJECT AFTER TAXES	236329.	238585.	240136.	241150.	241708.	244513.	244111.	243513.	242850.	242141.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1778	.1728	.1684

Outline to
Guide to Real Estate Investment Analysis

AFTERNOON SESSION

1. Any measure of yield requires careful definition of what is an annual profit and what will be included in resale proceeds and an explicit assumption about the opportunity cost of money or the reinvestment rate.

   A. Refer to definitions on page of Case problem #2.

   B. Refer to alternative definitions of annual profits and sales proceeds as found in limited partnership agreements by Stephen Roulac.

"Annual Returns"

1. Taxable income,
2. Net profit only (i.e. not net loss),
3. Taxable income calculated on the basis of straight line depreciation,
4. Net profit calculated on the basis of straight line depreciation,
5. Cash available for distribution before allowance for reserves,
6. Cash available for distribution after allowance for reserves,
7. Cash actually distributed,
8. Cash available for distribution before allowance for reserves plus the amount of that year's principal payment on the mortgage debt,
9. Cash available for distribution after allowance for reserves plus the amount of that year's principal payment on the mortgage debt,
10. Cash actually distributed plus the amount of that year's principal payment on the mortgage debt,
11. Cash available for distribution before allowance for reserves plus the tax liability or the tax shelter benefits of the taxable income calculated for a specified tax bracket,
12. Cash available for distribution after allowance for reserves plus the tax liability or the tax shelter benefits of the taxable income calculated for a specified tax bracket.
13. Cash actually distributed plus the tax liability or the tax shelter benefits of the taxable income calculated for a specified tax bracket,
14. Cash available for distribution before allowance for reserves plus the tax liability or the tax shelter benefits of the taxable income calculated for a specified tax bracket plus the amount of that year's principal payment on the mortgage debt,
15. Cash available for distribution after allowance for reserves plus the tax liability or the tax shelter benefits of the taxable income calculated for a specified tax bracket plus the amount of that year's principal payment on the mortgage debt,
16. Cash actually distributed plus the tax liability or the tax shelter benefits of the taxable income calculated for a specified tax bracket, plus the amount of that year's principal payment on the mortgage debt.

Definitions of "Sales Proceeds"

1. Gross sales price,
2. Gross sales price less closing costs and real estate sales commissions, also known as the net sales price,

3. Net sales price less beginning mortgage balance,
4. Net sales price less mortgage balance at time of sale,
5. Net sales price less purchase price,
6. Net sales price less the mortgage balance at time of sale less the initial equity investment,
7. Net sales price less the mortgage balance at the time of sale less the initial equity investment plus the sum of returns, however defined, distributed to the limited partners,
8. Net sales price less the partners' basis for tax purposes (the purchase price less accumulated depreciation),
9. Net sales price less the partners' basis for tax purposes less the amount necessary to pay taxes at some specified rate,
10. All cash, after payment of mortgage balance at time of sale, including refund of working capital, unused reserves, and unallocated reserves.

C. Suggestions for the appraiser looking for a standard on which to base valuation judgments:

1. Relate to purpose of appraisal and significance of hard dollar and soft dollars to the viewpoint to be served
2. Ellwood method
3. EDUCARE standard models for the investor/buyer
4. Standard assumptions to be promulgated by SEC
5. The appraisal customer's ideal preferences

II. Modern management defines risk as the potential variance between expectations and realizations, i.e., between proforma 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:

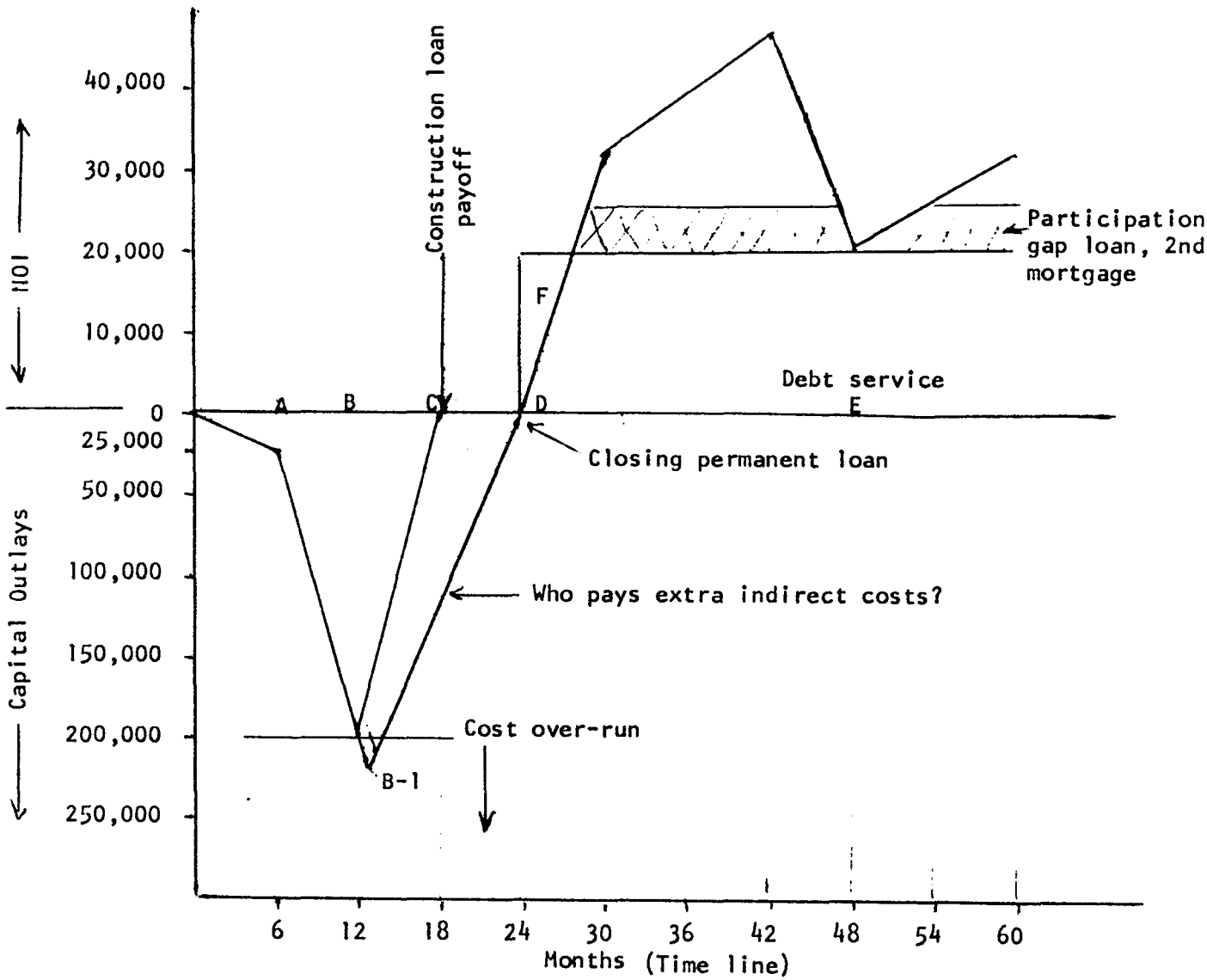
1. Identification of significant exposures to loss
2. Estimation of potential loss frequency and severity
3. Identification of alternative methods to avoid loss
4. Selection of a risk management method
5. Monitoring execution of risk management plan

E. Alternative methods for surviving potential risk losses:

1. Eliminate uncertainty (research or confirm)
2. Reduce frequency or severity of loss contingencies (incentive contracts)
3. Combine risks to increase predictability (reserves for expenses or pool investments)

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 (gap financing)

F. A graphic representation of real estate cash flows will serve to review the nature of yield and risk control in real estate financing and investment and provide a method for analyzing loan opportunities or limited partnerships.



A = Start of construction
B = Estimated completion date
B-1 = Actual completion date
C = Construction loan payoff
C-D = Gap financing period
D-E = Positive cash flow and gap loan participation
F = Negative cash throw-off

III. Risk Analysis applied to a Mortgage Loan Application

A. Motivation to repay is primarily cash dividends

1. The pleasure, pain, bail-out principle
2. Identify profit centers for borrower or packager on timeline
3. Determine if major profit centers occur before or after closing of loan
4. Determine duration of cash dividends relative to duration of loan
5. Resources of borrower to cover capital outlay overrun
6. Cushion in cash-flow variance indicated by default ratio, expense ratios, and after-tax spendable cash
7. Management incentives created by ancillary contracts such as limited partnerships, earn-out land contracts, and profit sharing formulas

B. Bail-out--alternative use for property

1. Pain of equity loss in foreclosure is fictitious--consider payback ratio--thus, poor motivation
2. A better incentive "pain" technique would be a national black list for borrowers in default on mortgages to financial institutions maintained by federal regulatory authorities.
3. Threat of foreclosure implies lender has alternative use for property.
   a. Rents restructured to lender's cost to acquire
   b. Conversion of property
   c. Consideration of payback to be realized by drastic surgery such as charitable donation, demolition, financial reorganization, or joint venture resale to reshape management incentives.

IV. Risk Analysis applied to a Limited Partnership Prospectus

A. From the investor viewpoint there are five basic areas of consideration in the selection of limited partnership investment.

1. Strategic choice of property type
2. Attributes of specific property or property pool
3. The marketing method utilized to sell security
4. The use of incentive clauses for control of the general partner
5. The financial projection

B. Strategy is concerned with matching the risk to the profit center and thus the investment to the appropriate point on the timeline. For example:

1. The political risk of securing an approved development plan and the monopoly profit that results
2. The manufacturing profit of building
3. The profit of creating a captive market for services
4. The time horizon for build-out, payback, or yes-no decisions

C. A limited partnership share is a second mortgage revenue bond. Is its use appropriate to the financial attributes of specific property types?

1. Does it lower breakeven point for high risk development venture?
2. Does it accelerate payback for the general or limited partner?
3. Does it retail sizzle for the cow carcass bought wholesale?
4. Is liquidity of shares entirely dependent on liquidity of property?

D. The marketing method utilized to sell security

1. Direct selling in the traditional real estate manner--high cost per unit sold for packager and high cost for investor because of brokers front end load.
2. The seminar approach--loss of credibility, loss of efficiency and now questions of legality.
3. Channeling through securities brokers (efficiency of mutual shares marketing but dependency on uninformed licensed security salesmen).
4. Marketing compensation consists of front-end loads, management fees, or participation in the event--% of asset or of money raised?

E. The use of incentive clauses for control of the general partner

1. Disenchantment clauses for replacement of general partner or property manager or both are critical.
2. Dissolution clauses for sale or refinancing must be watched carefully where general partner has participation.
3. Variance in projections must be controlled:

   a. Provision for cost guarantees
   b. Provision for earn-outs against absorption period
   c. Provision for loans and terms from general partner or assessment and penalties for limited partners for liquidity gaps
   d. A guarantee against negative cash flows
   e. Protection against construction of competitive units on adjacent property with 36 month option or right of first refusal.

4. Incentive clauses to make self interest of general partner the same as limited partner.

   a. Management fee subject to downward adjustment each year if certain expenses have increased at a greater rate than gross income.
   b. Bonus management fees for occupancy in excess of a stated level, say 94% or absorption rate in excess of some stated schedule.
   c. Controls on GP access to certain profit centers such as leasing equipment to partnership, insurance premiums, or similar spinoffs contingent on meeting certain cash payouts to limited partners on a cumulative basis.

Reading References:

1. "Caveat Emptor in Real Estate Equities" by Samuel L. Hayes & Leonard M. Harlan, Harvard Business Review, March-April 1972; OR The Real Estate Appraiser, Summer 1972
2. Real Estate Securities and Syndication by Stephen E. Roulac, published by National Association of Real Estate Boards, Chicago, Ill.
3. Real Estate Venture Analysis, by Stephen Roulac, Published by Practising Law Institute, 1133 Avenue of the Americas, New York, N.Y. 10036
4. Real Estate Review quarterly magazine, 89 Beach Street, Boston, Mass.

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2nd Edition

"MARKET VALUE" NOT ALWAYS APPLICABLE TO INVESTMENT PROPERTY OWNERS

"Market value", under its hundreds of state and federal court definitions, has been acceptable to the real estate appraiser as the fair measurement of just compensation (for all but special use properties) under eminent domain, estate and gift tax, property tax assessment and other situations. It is also applied as one of the two standards for assessment by assessment appraisers. Most definitions of market value mention a "price" and a "willing seller" and a "willing buyer". Even those which do not name or refer to a "seller" have been interpreted to carry the inference that the seller would be willing to sell at the price the buyer could afford to pay.

It is believed, however, the "market value" premise has been erroneous and thus inapplicable to numerous investment properties in the price range which attracts long term mortgagees and high tax bracket equity investors, ever since the investment market began to exploit the capital depreciation methods of the 1954 Internal Revenue Code. That code provided the first uses of the 200% of straight-line-declining-balance and the sum-of-the-years-digits methods; and the code has not been sufficiently modified by the 1962 and 1969 revisions to discourage but a small portion of investors in creating new properties or buying operating properties primarily - and often exclusively - for sheltering taxable income derived both from the newly acquired properties and from other investments and earnings.

This 7-page handout demonstrates the three major reasons for the obsolescence in the age-old definitions of market value: site cost basis, capital depreciation method, and secondary mortgage financing often provided by the seller of the land, on a non-transferable basis.

In this example the first owner of a one-year old, 250-unit apartment property has constructed the building on a site he acquired at a price of $720,000, $511,000 of which price was taken back as a deferred, long term purchase money trust to be subordinated to the mortgage loan on the completed property. The terms of the purchase money trust note call for full prepayment in event the property is resold.

Through his superlative mortgage financing and his use of the most accelerated depreciation method on the new building, the first owner and user of the property could not now afford to sell at the price which another investor in the same federal and state income tax brackets could afford to pay for the property, as the second user. Reasons: the second user could employ only 125% SL/DB depreciation, would not be allowed to claim that the non-depreciable asset, the land, is of less than $720,000 in value, and would not enjoy the long term second mortgage loan as would the first owner. The major assumptions in this example follow:

McCloud B. Hodges, Jr., 6819 Elm St., McLean, Va. (15 Nov. 1972)

1. No monetary inflation or deflation considered; future net income and resale value forecast on basis of constant dollars. Equity yield employed matches the extrapolated yields from recently sold, similarly priced investment properties, all on the constant dollar premise.

2. Future resale value of the property, if held by the first owner for an optimum term of 12 years, is calculated to be the capitalized worth of the next average annual net income stream ($335,650 at OA rate of .10) less $250 per apartment unit for major capital replacements at date of future reversion; and, for the second owner, under his optimum ownership term of 10 years, to be the capitalized worth of the next average annual net income stream ($358,000 at OA rate of .10) less $200 per apartment unit.

3. The new first mortgage loan, closed two months ago when the building reached 85% occupancy, is more than the laughable "75% of value" to the second owner and user, but is quite typical and realistic. It is based upon a required 125%-of-debt-service (25% coverage ratio) against the "stablized" net annual income projected at 95% occupancy. The terms of this mortgage note do not preclude its assumption by another owner of the property, if approved by the mortgage lender.

4. First owner, for tax reasons, has capitalized some of his entreprenurial expenses (mortgage and construction loan application fees, architectural and legal fees) as part of his capital costs, totalling $3,700,000; while today's hypothetical buyer and second user will be allowed to depreciate only that portion of his purchase price which excludes the $720,000 site value.

See next the two IMV computer printouts (*) showing,

Investment market value to the first owner = $4,419,676

Investment market value to the second owner = 3,980,860

Difference = 438,816 (11.02%)

Although the entreprenurial builder-owner has not invested nearly as much cash as is indicated in the first computer printout, the equity cash figure shown represents the present worth of his entreprenurial profit, his actual cash investment and the after-tax losses incurred in his expenses of construction loan interest, advertising and building operation during the rent-up period - all as of the date of valuation.

This real estate valuation analysis is written to invite attention to the need of some of the older professions and occupations to modernize their practises in dealing with this branch of land economics. It should also encourage the mortgage lenders, who are facing some increase in loan defaults in certain regions, to specify to the responsible appraisers which of the two values - first or second owner - is to be estimated.

(*) The Thomas A. Prince computer model treats after-tax cash flow in each year (except the reversion from resale) as being received, in 1/12th instalments, each at the beginning of the month.

ALL INPUTS INVOLVING A % MUST BE ENTERED AS A DECIMAL EQUIVALENT [11.75%=.1175]

PROJECT ID (Maximum 30 characters per line)

100 1 YR OLD APT PROP 95% OCCUPIED

101 INVESTMENT VALUE TO 1ST OWNER

USED FOR ELLWOOD'S VALUATION

	AVG. ANNUAL NET INCOME	BEFORE TAX YIELD	AFTER TAX YIELD
102	390000	.11	.085

OPERATION CODE:
- → 1–Produces IMV for a given after tax equity yield rate
- 2–Produces four after tax equity yield rates for four given IMVs

NET INCOME CODE:
- 1–Constant net income value for each year
- → 2–Different net income value for each year (If the last year of the projection term does not fall in the last position of a line fill the remaining years of that line with zeros)

	OPERATION CODE	PROJECTION TERM (yrs)	NET INCOME CODE
103	1	12	2

NET INCOME [If net income is constant enter the value in position (1) only]

	(1)	(2)	(3)	(4)	(5)
104	400000	400000	400000	396000	392000
	(6)	(7)	(8)	(9)	(10)
105	388000	384000	380000	376000	372000
	(11)	(12)	(13)	(14)	(15)
106	368000	364000	0	0	0
	(16)	(17)	(18)	(19)	(20)
107					

OWNERSHIP FORM CODE:
- 1–Corporation (Operating losses applied to other investments)
- 2–Corporation (Operating losses carried back/carried over)
- 3–Corporation (Taxable income offset by losses from other investments)
- 4–Corporation (Set-up solely for this investment)
- → 5–Non-corporation (Operating losses applied to other investments)
- 6–Non-corporation (Operating losses carried back/carried over)
- 7–Non-corporation (Taxable income offset by losses from other investments)

EXCESS DEPRECIATION RECAPTURE CODE:
- 1–No recapture
- 2–FHA 221 (d) (3), 236 before 1975 (After 20 months-declines 1% per month)
- → 3–All other residential rentals (After 100 months-declines 1% per month)
- 4–All non-residential–100% recapture

	OWNERSHIP FORM CODE	FEDERAL TAX RATE	STATE TAX RATE	STATE CAPITAL GAINS RATE	EXCESS DEPRECIATION RECAPTURE CODE
108	5	.60	.09	.09	3

APPRECIATION/DEPRECIATION AT RESALE:

APP/DEP CODE:
- 1–% of IMV (Enter the % in the APP/DEP AT RESALE column)
- 2–$ amount (Enter the $ amount in the APP/DEP AT RESALE column)
- 3–Reversionary $ amount (Enter the $ amount in the APP/DEP AT RESALE column)

	APP/DEP CODE	APP/DEP AT RESALE ($ OR %)	SALES COMMISSION RATE (0 if none)
109	3	3419000	.02

DEPRECIABLE CAPITAL ASSETS:

ASSET CODE: Asset value as a:

→1–$ amount (Enter the $ amount in the ASSET VALUE column)
2–% of IMV (Enter the % in the ASSET VALUE column)
3–% of the difference between IMV and land value (Enter $ amount for land value in LAND VALUE column and the % in the ASSET VALUE column)

METHOD CODE:

1–Straight line
2–125%
3–150%
4–200%
→5–Sum-of-years-digits

NUMBER OF ASSETS (0 to 6) | LAND VALUE (0 if ASSET CODE 3 is not used)

110 3 , 0

[Assets MUST be entered in order of ASCENDING ASSET CODES]

	ASSET CODE	ASSET VALUE ($ or %)	METHOD CODE	LIFE	SALVAGE (0 if none)
111	1	2590000	5	40	0
112	1	629000	5	22	0
113	1	481000	5	10	0
114					
115					
116					

MORTGAGES:

MORTGAGE CODE:

→1–Existing mortgage or mortgage of known $ amount (Enter the $ amount in the KEY FIGURE column)
2–New mortgage amount which is a % of IMV (Enter the ratio (%) in the KEY FIGURE column)

THE FOLLOWING TWO OPTIONS CANNOT BE USED SIMULTANEOUSLY

3–Secondary mortgage amount which is the difference between IMV and sum of known amounts for equity cash and the other mortgages (Enter the $ amount for cash equity in the KEY FIGURE column)
4–Secondary mortgage amount which is the difference between a total mortgage ratio and the sum of other mortgages of known amounts (Enter the total mortgage ratio (%) in the KEY FIGURE column)

TERM AND ANNUAL CONSTANT:

For each mortgage either the TERM or the ANNUAL CONSTANT must be provided except in the case of a balloon for which both must be provided. Enter a zero for the TERM or the ANNUAL CONSTANT, whichever is unknown. The annual constant must be at least 8 decimal places.

NUMBER OF MORTGAGES (0 to 6)

117 2

[Mortgages MUST be entered in order of ASCENDING MORTGAGE CODES]

	MORTGAGE CODE	KEY FIGURES ($ or %)	INTEREST RATE	TERM (Months)	ANNUAL CONSTANT
118	1	3267000	.09	336	0
119	1	511000	.10	300	0
120					
121					
122					
123					

BEFORE TAX IMV(11.00%) $ 3957929
AFTER TAX IMV(8.50%) $ 4419676
DO YOU WANT DETAIL (0=NO,1=YES)?1

INVESTMENT MARKET VALUE ANALYSIS
1-YR OLD APT PROP 95% OCCUPIED
INVESTMENT VALUE TO 1ST OWNER

PREPARED BY A COMPUTER IN
CONSULTATION WITH M.B. HODGES,JR
6819 ELM ST. MCLEAN, VA. 22101 14:44EST 11/15/72

****
INVESTMENT MARKET VALUE:

AFTER TAX YIELD OF 8.50%: $ 4419676
****
DETAIL FOR AFTER TAX IMV

FINANCING:

MORTGAGES:

1.	9.000%	28 YRS	0 MONS	$	3267000
2.	10.000%	25 YRS	0 MONS	$	511000

EQUITY CASH: $ 641676

RESALE OF INVESTMENT IN 12 YEARS:

ESTIMATED RESALE PRICE	$	3419000
LESS: MORTGAGE BAL.		3113321
SALES COMMISSION		68380
CASH REVERSION BEFORE TAXES	$	237299
LESS: CAPITAL GAINS TAX(STD.)		286047
TAX ON RECAPTURED DEPR.		228415
TAX PREFERENCE TAX		0
CASH REVERSION AFTER TAXES	$	-277163

YR	NET INCOME	MORTGAGE INTEREST	BOOK DEPR.	TAXABLE INCOME	INCOME TAX	CASH FLOW BEFORE TAX	CASH FLOW AFTER TAX
1	400000	343813	268491	-212304	-125319	24256	149575
2	400000	340764	254101	-194865	-115667	24256	139923
3	400000	337425	239711	-177136	-105830	24256	130086
4	396000	333766	225321	-163087	-98334	20256	118590
5	392000	329757	210931	-148688	-90615	16256	106871
6	388000	325365	196540	-133905	-82653	12256	94909
7	384000	320552	182150	-118702	-74423	8256	82679
8	380000	315278	167760	-103038	-65532	4256	69788
9	376000	309500	153370	-86870	-55249	256	55505
10	372000	303169	138980	-70149	-44614	-3744	40870
11	368000	296231	124590	-52821	-33469	-7744	25725
12	364000	288629	118945	-43574	-27713	-11744	15969

BEFORE TAX IMV(11.00%) $ 3919359
AFTER TAX IMV(8.50%) $ 3980860
DO YOU WANT DETAIL (0=NO,1=YES)?1

INVESTMENT MARKET VALUE ANALYSIS
1-YR OLD APT PROP 95% OCCUPIED
INVESTMENT VALUE TO 2ND OWNER

PREPARED BY A COMPUTER IN
CONSULTATION WITH M.B. HODGES, JR
6819 ELM ST. MCLEAN, VA. 22101 14:49EST 11/15/72

****
INVESTMENT MARKET VALUE:

AFTER TAX YIELD OF 8.50%: $ 3980860
****

DETAIL FOR AFTER TAX IMV

FINANCING:

MORTGAGES:
1. 9.000% 28 YRS 0 MONS $ 3267000

EQUITY CASH: $ 713860

RESALE OF INVESTMENT IN 10 YEARS:

ESTIMATED RESALE PRICE $ 3530000

LESS: MORTGAGE BAL. 2847849
SALES COMMISSION 70600

CASH REVERSION BEFORE TAXES $ 611551

LESS: CAPITAL GAINS TAX(STD.) 256985
TAX ON RECAPTURED DEPR. 29904
TAX PREFERENCE TAX 12354

CASH REVERSION AFTER TAXES $ 312308

YR	NET INCOME	MORTGAGE INTEREST	BOOK DEPR.	TAXABLE INCOME	INCOME TAX	CASH FLOW BEFORE TAX	CASH FLOW AFTER TAX
1	400000	292931	155817	-48748	-30886	79978	110864
2	400000	290389	145174	-35563	-22618	79978	102596
3	400000	287609	135531	-23140	-14717	79978	94695
4	396000	284569	131847	-20416	-12984	75978	88962
5	392000	281243	128319	-17562	-11169	71978	83147
6	388000	277606	125770	-15376	-9779	67978	77757
7	384000	273627	123868	-13495	-8582	63978	72560
8	380000	269274	122025	-11299	-7186	59978	67164
9	376000	264514	120240	-8754	-5567	55978	61545
10	372000	259307	120240	-7547	-4799	51978	56777

CASH-FLOW ANALYSIS 10

10.1 FINANCIAL IMPLICATIONS OF DESIGN & MARKET CONSTRAINTS

Real estate decisions for both public and private projects ultimately involve issues relative to the wise management of money over time. Unlike investment in bonds and stock, real estate seldom provides any fixed points in advance relative to total investment required, timing of returns, or standardized formats facilitating comparison or statistical forecasting. In the design stages of a project financial analysis and comparison of alternatives must depend on extensive and detailed assumptions in dollars but these assumptions and the conclusions are highly volatile numbers.

Measurable returns to the investor are generally confined to cash returns. The ultimate feasibility of a project depends on successful management of cash flows to maintain solvency, stability and hopefully a profit surplus appropriate to risk and capital employed. Cash may be generated from rents, sales, financing gambits, or income tax ploys. The sequence of these returns must be matched to the sequence of outlays to measure both business risk and financial risk. Business risk is concerned with the ability to repay financial obligations with interest on schedule. Profit is measured in dollars and yield, as a function of money at work over time. Thus financial management, risk analysis, and comparative profitability all require some minimum set of assumptions in the following areas:

10.2 A time line or calendar of events related to financial assumptions.

10.3 A product mix and revenue sequence.

10.4 A capital budget outlay schedule.
10.5 An operating cost and outlay sequence.
10.6 A financing plan with specific credit terms and contributions.
10.7 Summary sequence of cash outlay and surplus expectations.
10.8 Measurement standards of risk and yield.
10.9 Identification of possible indirect benefits and profit centers.

To simulate the financial consequences of any set of land development assumptions, the University of Wisconsin School of Business and Robert Gibson[1] had developed a cash flow model which combined a variety of features borrowed from capital cost estimating models, critical path network analysis, and investment evaluation models. While all its features and mathematics are too detailed to develop in this case, one set of financial inputs and output are provided as a demonstration of the technique. Many runs of the model were made and further planning would require continual financial revisions to specify the range of alternative outcomes the developer might expect.

Financial inputs can be no more specific than the design detail available at any stage of analysis and yet the quantitative nature of finance and electronic computation may lead to exaggerated

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[1] The computer program used in this study is available to developers from Robert Gibson, 130 Fairview Street, Walworth, Wisconsin, 53189.

credibility inherent in pseudo-accurate detail. With this explicit warning the reader can match some of the brief explanations and assumptions which follow to the computer outputs which form the last half of this chapter.

10.2 A. THE TIME LINE OR CALENDAR OF EVENTS

Development is a process over time and each set of time dimensioned variables have been noted on the computer runs with an (A) . Computer runs are numbered pages 1 to 8

Page 1

To reflect inflation influences on raw land, real estate taxes and capital costs; all assumptions of these items are adjusted annually. Construction costs per feature are expected to rise 5 percent a year. Real estate taxes have been rising in the county at 2 percent a year and there would be an initial increase of 20 percent upon sale of the land from the parent corporation to the developing company. Raw land value was inflated at 1 percent a year net of sales commissions to provide a basis for estimating real estate tax assessed value and liquidating value of the development firm at the end of any specific year. The "Cash Column" is in units of one thousand dollars and states no cash is available for profit distribution unless surplus exceeds $90,000 on the first year, a control to permit internal financing from profits.

Page 2

The capital scheduling of general improvements such as road construction for the clubhouse is indicated by year. The release of title and therefore real estate tax responsibility and carrying charges for land not specifically allocated to lots is also indicated by year under the title "acres dedicated."

Page 3

Timing of borrowing, interest payments, and principal payments on a construction credit line are recorded under first mortgage transaction.

Pages 4 - 7

For each type of sales product a sales price must be set by year together with the estimated number of units which might be sold. Note that no sales are expected for the first year which is reserved for design and construction. Other time line assumptions which do not appear on the output but are required on the input form, include the lead time necessary to produce a lot, the inventory to be maintained in excess of sales and carrying charges on finished inventories. This particular set of assumptions requires six years to build and to complete.

10.3 B. A PRODUCT MIX AND REVENUE SEQUENCE

The revenue cycle begins with the nature of merchandise for sale. For a planned unit development a portion of the product is in the nature of community facilities which may be not directly costed to individual sales units. However, a large portion of land and improvement costs, as well as overhead, can be allocated to specific types of salable products such as home sites or a class of condominium apartments. These specific sales price and allocated capital costs are summarized below and appear on pages 4 to 7 and are noted with (B).

Page 2

Provided a summary statement of land use allocations with approximately 858 acres improved and lotted. Left as wilderness acres in common ownership were 2,442 acres, marred with only trails and picnic areas, etc., which means a ratio of developed acres and wilderness acres of 1:2.8 or about 27 percent. There are a total of 1,460 dwelling units or sites which is a ratio of only one DU for each 2.2 acres of land!

Page 4

One-half acre lots (approximately 100 x 200) with water, electricity and group septic services	900 units

1. Initial sales price	$8,000
2. Absorption rate 180 units per year	
3. Specific allocated improvement costs:	
a. 100 feet of half road	350
b. electrical service	200
c. water line	250
d. cluster septic share	500
e. recreation equipment allowance	25
f. pedestrian trail at rear of lot	50
g. contingencies	200
h. financing charge*	425
Total capital cost per unit	$2,000/lot
4. Gross profit per unit	6,000

Page 5

One-acre lots (approximately 150 x 290) without water and septic.	400 units
1. Initial sales price	$5,500
2. Absorption rate 100 units per year	
3. Specific allocated improvement costs:	

*Allowance for discount on sale of 8 percent land contract for cash. Marked with * in following references also.

a. 150 feet of half road	525
b. electrical service	200
c. recreation equipment allowance	25
d. pedestrian trail at rear of lot	75
e. contingencies	200
f. financing charge*	325
Total capital cost per unit	$1,350/lot
4. Gross profit per unit	$4,150

Page 6

Studio deluxe condominium (550 square feet living space) — 80 units

1. Initial sales price with land	$17,900
2. Absorption rate 20 units per year	
3. Specific allocated improvement costs:	
a. road share plus 2 parking stalls	350
b. electrical service	200
c. recreation equipment allowance	25
d. cluster septic share	500
e. water line	250
f. structure @ $15/sf	8,250
g. financing charge*	1,000
h. contingencies	200
Total capital cost per unit	$10,775/unit
4. Gross profit per unit	$ 7,125

Two-bedroom condominium (750 square feet living space)	80 units
1. Initial sales price with land	$22,500
2. Absorption rate 20 units per year	
3. Specific allocated improvement costs:	
a. road share plus 2 parking stalls	350
b. electrical service	200
c. recreational equipment allowance	25
d. cluster septic share	500
e. water line	250
f. structure @ $15/sf	11,250
g. financing charge*	1,000
h. contingencies	200
Total capital cost per unit	$13,775/unit
4. Gross profit per unit	$ 8,725
Total number of salable units of 3,300 acres:	1,460

10.4 C. A CAPITAL BUDGET OUTLAY SCHEDULE

The basic elements of the capital budget and cost estimating models are a catalog of construction costs, an inventory of land

used and available, and some initial inputs of land and capital These items are identified on the computer run with Ⓒ .

Page 1

The catalog of costs for capital budgeting may be placed in the computer at any level of detail, in lumps such as the clubhouse budget of $100,000 or in modules such as "one running foot of 40 foot wide trail area" occupying 40 square feet of land and costing $1 per running foot. The input forms make it possible to assemble a capital budget for any improvement by specifying quantities of required items in the catalog. These quantities of input are converted by the computer to the cost of general improvement which appear on page 2 or the total cost of allocated capital improvement which appear for each product on pages 4 -7.

Page 3

The initial capital resources provided by the parent corporation to its development subsidiary can be summarized as consisting of a total equity in development of $540,000 allocated among $330,000 for 3,300 acres at $100 per acre, $95,000 for purchase of key parcels owned by others, and $115,000 in cash. The price of $100 per acre provides more than a $200,000 capital gain to the parent corporation which is not included in profit calculations by the computer. This information also provides the basis for estimating income taxes for the development corporation during the life of the project.

10.5 D. AN OPERATING COST AND OUTLAY SEQUENCE

Operating costs and allowances can be fixed or can be variable as a function of both construction in process and the level of sales activity. These basic assumptions are itemized below and identified where they appear on the computer outputs with (D) . Since they appear virtually throughout the computer output they are not all identified by page.

1. Organizational legal fees $5,000.
2. Fixed management cost of $75,000 per year, plus
3. Professional fees and construction administration at 10 percent of construction cost in place, plus
4. Sales administration and advertising at 15 percent of sales, plus
5. Sales commission of 15 percent of sales unit cost.
6. Credit line for construction of improvements provided at 12 percent.
7. Working capital loans from parent corporation at 15 percent per annum.
8. On page it should be noted that a basis for computing both real estate taxes and income tax is provided. The proration formula refers to the need of allocating investment in general improvement to unit sales or dollar sales or some combination of both. In this case general costs were prorated according to sales value of the unit to equalize the gross profit spread and to avoid distortion if higher profit items tended to sell earlier or later during the development. Once other items in the financial plan were firmly established, the computer model would permit testing of alternative sales or financial strategies.

10.6 F. A FINANCING PLAN OF SPECIFIC CREDIT TERMS & EQUITY CONTRIBUTIONS

The financing specifications for this particular demonstration were greatly simplified by the credit rating of the client. While the computer model is designed to provide elaborate combinations of various land development financing terms available today, only a very basic two stage financing program was required. All capital improvements were paid for from a basic credit line which did not exceed $2,000,000 at any time during the project life and which would be closed out during the fifth year. Operating expenses were met out of initial cash capital with a 12 percent opportunity cost and 20 percent yield target, retained earnings, or short term working capital loans available from the parent corporation at 1.25 percent per month.

It was assumed that all sales were cash sales as any consumer credit contracts would be instantly sold to a bank. Fifty percent of all sales were expected to be credit sales and the average discount of $700 per credit sale sold to the bank was distributed to all sales as a $350 component of closing costs on lots with correspondingly higher discounts for condominium mortgages in their closing costs.

10.7 F. SUMMARY SEQUENCE OF CASH OUTLAY SURPLUS EXPECTATIONS &

With all of the various subcomponents of the development process taking place at once, it is useful to assemble and aggregate these outlays and receipts over time.

This summary page includes distributions over the six-year development plan and in total with a percentage analysis. Most items are self-explanatory and therefore discussion will focus on the key line Net Cash After Taxes.

Cash flows are essentially negative until the fifth year because the financing utilizes advances in the form of loans from the parent corporation. With repayment of all debt, cash surpluses available for dividends appear in the fifth and sixth years. The present value by simple discounting of these returns of 20 percent suggests an investment value well in excess of the $540,000 initially required. The internal rate of return, however, when the cost of capital is recognized at 12 percent, is slightly lower at 19.1 percent.

Thus at the preliminary stage of design the project indicates that it can probably provide the targeted rate of return for funds employed but the financial analysis recommends that the design process now refine:

1. The timing of capital expenditure to reduce financing and interest costs.
2. The assumptions of management and general administration costs (excluding sales costs) which are high.
3. The sales price or cost estimates for allocated capital outlay which at 30 percent of sales may be high.

4. The quantity and timing of unit sales which would most certainly not be equal per year as assumed but rather which would peak during the third and fourth years.
5. Assumptions regarding sales to finished inventory ratios and the absence of any sales during the first year when many developers are able to secure deposits on future deliveries.

10.8 G. MEASUREMENT OF STANDARDS OF RISK AND YIELDS

The traditional financial ratios and discounting of future returns or the application of industry rules of thumb would be best applied after plans and financial assumptions were more firmly set by the feedback process of testing and researching the inputs from the designers, the merchandisers, and the financial consultants. This project is marginal with a rate of return of 19 percent until plans can be detailed to assure greater accuracy of capital costs and rate of sale.

10.9 H. IDENTICATION OF POSSIBLE INDIRECT BENEFITS & PROFIT CENTERS

These runs of the computer did not include this but could be expanded to measure profit from business centers beyond those strictly tied to land development. These would include:

1.	Possible mobile home franchising, estimated sales of 400 units x $600 commission/unit =	$240,000 gross profit
2.	Possible project management contract with ownership association, 1,460 property owners at $30 each per year = (Assume assessments at $100/year)	$43,650 net fees
3.	Sale of 3,300 acres x $100/acre = or a $195,000 profit of a $40/acre basis.	
4.	Interest on working capital loans to subsidiary at 1.25 percent/month or 15 percent/year.	
5.	If K-C finances Kimberlands' land contracts, assume 50 percent of total sales on 5-year land contracts x 80 percent loan ratio x allowance for 10 percent discount + 8 percent per year on-going interest.	

SUMMARY OF INPUTS

CAPITAL COST COMPONENTS (C)

NAME	PRICE PER UNIT	LAND COVERED	TYPE
10FT 1/2 SURF RD	4.00	20.00	2
SECOND REC BLD	35000.00	1.00	1
ELECT TO SITE	200.00	.00	0
CLUB HOUSE	100000.00	25.00	1
I-D POOL	75000.00	1.00	1
AREA SWM POOL	15000.00	1000.00	2
AREA UTIL BLDG	9000.00	1000.00	2
ENTRANCES + SGNS	30000.00	80000.00	2
1RF OF 40FTW TRL	1.00	40.00	2
STABLE	10000.00	4.00	1
SKEET + RIF RANG	5000.00	1.00	1
DOCKS + LANDINGS	10000.00	.50	1
REC EQUIP	25.00	.00	0
MGR HOUSE	20000.00	.50	1
.1 CLUSTERSEPTIC	500.00	.00	0
WATER WELL	2100.00	.00	0
MAINT FACILITIES	10000.00	2.00	1
RES BLDG CUST SF	15.00	.00	0
WILDNERNESS LAND	100.00	2120.00	1
AREA 1 DREDGING	18000.00	.00	0
AREA 2 DREDGING	30000.00	.00	0
CONTINGENCIES	200.00	.00	0
HIKING TRAIL	2000.00	15740.00	2
WATER LINE	250.00	1.00	0

TYPE CODES
0=NO LAND COVERED
1=LAND COVERED IN ACRES
2=LAND COVERED IN SQUARE FEET

ANNUAL PERCENTAGE INDEXES (A)

YEAR	LAND	R.E. TAXES	CAPITAL COSTS	CASH
1	100.	100.	100.	90.
2	101.	120.	105.	80.
3	102.	123.	110.	70.
4	103.	124.	115.	60.
5	104.	126.	120.	.
6	105.	128.	125.	.
7	106.	130.	130.	.
8	107.	132.	135.	.
9	108.	134.	140.	.
10	109.	136.	145.	.

.5AC LOTS W/UTIL

SUMMARY OF INPUTS

		YEAR	SALES PRICE (A)	NO. UNITS SOLD
LOT SIZE--SQUARE FEET (B)	21780.	1	8000.	.
LOT SIZE--ACRES	.50	2	8000.	180.
PERCENT SOLD FOR CASH EACH YEAR	100.00	3	8400.	180.
O/O DOWN REQUIRED ON LAND CONTRACT SALES	.00	4	8400.	180.
INTEREST RATE ON LAND CONTRACT SALES	.00	5	8800.	180.
TERM IN YEARS ON LAND CONTRACT SALES	.00	6	8800.	180.
CARRYING COST PER UNIT OF SALES INVENTORY	100.00	7	.	.
SALES COMMISSIONS O/O OF SALES PRICE (D)	15.00	8	.	.
CLOSING COSTS PER UNIT	425.00	9	.	.
CAPITAL COST PER UNIT	1625.00	10	.	.

DEVELOPMENT PERIOD	1	2	3	4	5	6	7	8	9	10
BEGINNING INVENTORY (B)	.	.	45.	45.	45.	45.	.	.	.	.
PRODUCTION STARTS	225.	180.	180.	180.	135.	.	.	.	.	.
PRODUCTION COMPLETIONS	.	225.	180.	180.	180.	135.	.	.	.	.
SALES IN UNITS	.	180.	180.	180.	180.	180.	.	.	.	.
UNITS SOLD FOR CASH	.	180.	180.	180.	180.	180.	.	.	.	.
PRICE PER UNIT	8000.	8000.	8400.	8400.	8800.	8800.	.	.	.	.
REVENUE FROM CASH SALES	.	1440000.	1512000.	1512000.	1584000.	1584000.	.	.	.	.
UNITS SOLD ON LAND CONTRACTS	.	.	.	.	.	.	.	.	.	.
DOWN PAYMENT RECEIVED	.	.	.	.	.	.	.	.	.	.
ACCOUNTS RECEIVABLE ADDED	.	.	.	.	.	.	.	.	.	.
SALES COSTS										
COMMISSIONS PAID	.	216000.	226800.	226800.	237600.	237600.	.	.	.	.
CLOSING COSTS	.	76500.	76500.	76500.	76500.	76500.	.	.	.	.
NET CASH GENERATED FROM SALES	-.	1147500.	1208700.	1208700.	1269900.	1269900.	-.	-.	-.	-.
RUNOFF OF LAND CONTRACT SALES										
INTEREST	.	.	.	.	.	.	.	.	.	.
PRINCIPAL	.	.	.	.	.	.	.	.	.	.
PERIOD END ACCOUNTS RECEIVABLE	.	.	.	.	.	.	.	.	.	.
REAL ESTATE TAXES ON INVENTORY	.	5346.	11226.	11226.	11761.	5880.	.	.	.	.
CARRYING COST OF INVENTORY	.	2250.	4500.	4500.	4500.	2250.	.	.	.	.
CAPITAL COST OF IMPROVEMENTS (C)	365625.	307125.	321750.	336375.	263250.	.	.	.	.	.
TOTAL CASH REVENUE	-365625.	832784.	871224.	856604.	990390.	1261770.	.	.	.	.

(C)

PURCHASE BASIS OF RAW LAND FOR DEVELOPER	425000.	
DEBT OUTSTANDING ON RAW LAND AT START OF DEVELOPMENT	.	
BOOK EQUITY IN RAW LAND AT START OF DEVELOPMENT	425000.	
RESALE VALUE OF RAW LAND NET OF TRANSFER COSTS	425000.	
RESALE EQUITY IN RAW LAND	425000.	
INITIAL EQUITY CASH IN DEVELOPMENT ENTITY	115000.	
TOTAL EQUITY IN DEVELOPMENT ENTITY	540000.	
CASH EXPENSES OF ORGANIZATION	5000.	AMORTIZED FOR 5 YEARS--RECOGNIZED IN TAXABLE INCOME
NET CASH FOR DEVELOPMENT	110000.	INCLUDED IN YEAR 1 NET CASH AFTER TAXES

FINANCING FOR LAND DEVELOPMENT (E)

1ST MORTGAGE AMOUNT-- 3000000. INTEREST RATE--.1200 MONTHLY PAYMENT-- .RELEASE PAYMENT-- 8000.

	1	2	3	4	5	6	7	8	9	10
PRINCIPAL PAID	.	1504000.	1504000.	1504000.	526990.	.	.	.	.	.
INTEREST	105000.	180728.	127644.	67741.	15824.	.	.	.	.	.
PRINCIPAL RECEIVED	1750010.	1016120.	1107150.	902460.	263250.	.	.	.	.	.
BALANCE	1750010.	1262130.	865280.	263740.	.	.	.	.	.	.

		(D)	
MARGINAL TAX RATE	.4800	CARRYING COST PER RAW ACRE OF LAND	1.00
WORKING CAPITAL INTEREST RATE	.1500	EQUITY RATE OF RETURN--USED IN PRESENT VALUE CALCULATIONS	20.00
REAL ESTATE TAX EQUALIZATION RATE	33.00	PORTFOLIO RATE OF RETURN--OR OPPORTUNITY COST	12.00
REAL ESTATE TAXES PER THOUSAND OF VALUE	90.00	FIXED ADMINISTRATIVE + GENERAL EXPENSES PER YEAR	75000.
PRORATION FORMULA 0/0 TO LAND AREA	.00	ADMIN. + GENERAL EXPENSES AS A 0/0 OF SALES VALUE	15.00
PRORATION FORMULA 0/0 TO SALES VALUE	100.00	ADMIN. + GENERAL EXPENSES AS A 0/0 OF CAPITAL EXPENDITURES	10.00

COSTS OF GENERAL IMPROVEMENTS (A)	1	2	3	4	5	6	7	8	9	10
10FT 1/2 SURF RD	280000.	73500.	77000.	80500.	.	.	.	.	.	.
SECOND REC BLD	.	.	38500.	.	.	.	.	.	.	.
CLUB HOUSE	100000.	.	.	.	.	.	.	.	.	.
I-O POOL	75000.	.	.	.	.	.	.	.	.	.
AREA SWM POOL	30000.	.	.	.	.	.	.	.	.	.
AREA UTIL BLDG	18000.	.	.	.	.	.	.	.	.	.
ENTRANCES + SGNS	30000.	.	.	.	.	.	.	.	.	.
1RF OF 40FTW TRL	42240.	44352.	.	.	.	.	.	.	.	.
STABLE	10000.	.	.	.	.	.	.	.	.	.
SKEET + RIF RANG	5000.	.	.	.	.	.	.	.	.	.
DOCKS + LANDINGS	20000.	.	.	.	.	.	.	.	.	.
MGR HOUSE	20000.	.	.	.	.	.	.	.	.	.
WATER WELL	6300.	.	.	.	.	.	.	.	.	.
MAINT FACILITIES	10000.	.	.	.	.	.	.	.	.	.
WILDNERNESS LAND	100.	.	.	.	.	.	.	.	.	.
AREA 1 DREDGING	18000.	.	.	.	.	.	.	.	.	.
AREA 2 DREDGING	.	.	33000.	.	.	.	.	.	.	.
HIKING TRAIL	16000.	.	17600.	.	.	.	.	.	.	.
TOTAL	680640.	117852.	166100.	80500.	.	.	.	.	.	.

ACRES DEDICATED (A)	1	2	3	4	5	6	7	8	9	10
GENERAL USE										
10FT 1/2 SURF RD	32.13	8.03	8.03	8.03	.00	.00	.00	.00	.00	.00
SECOND REC BLD	.00	.00	1.00	.00	.00	.00	.00	.00	.00	.00
CLUB HOUSE	25.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
I-O POOL	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AREA SWM POOL	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00
AREA UTIL BLDG	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00
ENTRANCES + SGNS	1.83	.00	.00	.00	.00	.00	.00	.00	.00	.00
1RF OF 40FTW TRL	38.78	38.78	.00	.00	.00	.00	.00	.00	.00	.00
STABLE	4.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
SKEET + RIF RANG	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
DOCKS + LANDINGS	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MGR HOUSE	.50	.00	.00	.00	.00	.00	.00	.00	.00	.00
MAINT FACILITIES	2.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
WILDNERNESS LAND	2120.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
HIKING TRAIL	2.89	.00	2.89	.00	.00	.00	.00	.00	.00	.00
SPECIFIC USE										
10FT 1/2 SURF RD	.00	16.98	16.98	16.98	16.98	8.26	.00	.00	.00	.00
1RF OF 40FTW TRL	.00	15.15	15.15	15.15	15.15	8.26	.00	.00	.00	.00
TOTAL	2230.24	78.96	44.06	40.17	32.13	16.52	.00	.00	.00	.00

(B)

INITIAL RAW LAND AVAILABLE--	3300.00 ACRES
LAND FOR .5AC LOTS W/UTIL	450.00
LAND FOR 1AC LOT W/O UTIL	400.00
LAND FOR STUDIO CONDO LUX	4.00
LAND FOR [redacted]BR CONDOMINIUM	4.00
LAND DE[redacted]TED	2442.08
LAND LEFT FOR OPEN SPACE	-.10

1AC LOT W/O UTIL

SUMMARY OF INPUTS

	(B)		(A)
		YEAR	SALES PRICE	NO. UNITS SOLD
LOT SIZE--SQUARE FEET	43560.	1	5500.	.
LOT SIZE--ACRES	1.00	2	5500.	100.
PERCENT SOLD FOR CASH EACH YEAR	100.00	3	5775.	100.
O/O DOWN REQUIRED ON LAND CONTRACT SALES	.00	4	6050.	100.
INTEREST RATE ON LAND CONTRACT SALES	.00	5	6050.	100.
TERM IN YEARS ON LAND CONTRACT SALES	.00	6	.	.
CARRYING COST PER UNIT OF SALES INVENTORY	100.00	7	.	.
SALES COMMISSIONS O/O OF SALES PRICE	15.00 (D)	8	.	.
CLOSING COSTS PER UNIT	325.00	9	.	.
CAPITAL COST PER UNIT	1100.00	10	.	.

DEVELOPMENT PERIOD (B)	1	2	3	4	5	6	7	8	9	10
BEGINNING INVENTORY	.	.	25.	25.	25.	.	.	.	.	.
PRODUCTION STARTS	125.	100.	100.	75.	.	.	.	.	.	.
PRODUCTION COMPLETIONS	.	125.	100.	100.	75.	.	.	.	.	.
SALES IN UNITS	.	100.	100.	100.	100.	.	.	.	.	.
UNITS SOLD FOR CASH	.	100.	100.	100.	100.	.	.	.	.	.
PRICE PER UNIT	5500.	5500.	5775.	6050.	6050.	.	.	.	.	.
REVENUE FROM CASH SALES	.	550000.	577500.	605000.	605000.	.	.	.	.	.
UNITS SOLD ON LAND CONTRACTS	.	.	.	.	.	.	.	.	.	.
DOWN PAYMENT RECEIVED	.	.	.	.	.	.	.	.	.	.
ACCOUNTS RECEIVABLE ADDED	.	.	.	.	.	.	.	.	.	.
SALES COSTS										
COMMISSIONS PAID	.	82500.	86625.	90750.	90750.	.	.	.	.	.
CLOSING COSTS	.	32500.	32500.	32500.	32500.	.	.	.	.	.
NET CASH GENERATED FROM SALES	.	435000.	458375.	481750.	481750.	.	.	.	.	.
RUNOFF OF LAND CONTRACT SALES										
INTEREST	.	.	.	.	.	.	.	.	.	.
PRINCIPAL	.	.	.	.	.	.	.	.	.	.
PERIOD END ACCOUNTS RECEIVABLE	.	.	.	.	.	.	.	.	.	.
REAL ESTATE TAXES ON INVENTORY	.	2041.	4287.	4492.	2246.	.	.	.	.	.
CARRYING COST OF INVENTORY	.	1250.	2500.	2500.	1250.	.	.	.	.	.
CAPITAL COST OF IMPROVEMENTS	137500.	115500.	121000.	94875.	.	.	.	.	.	.
TOTAL CASH REVENUE	-137500.	316209.	330588.	379883.	478254.	.	.	.	.	.

STUDIO CONDO LUX

SUMMARY OF INPUTS

	(B)		YEAR	SALES PRICE (A)	NO. UNITS SOLD
LOT SIZE--SQUARE FEET	550.		1	17900.	.
LOT SIZE--ACRES	.01		2	17900.	20.
PERCENT SOLD FOR CASH EACH YEAR	100.00		3	18795.	20.
O/O DOWN REQUIRED ON LAND CONTRACT SALES	.00		4	19690.	20.
INTEREST RATE ON LAND CONTRACT SALES	.00		5	20585.	20.
TERM IN YEARS ON LAND CONTRACT SALES	.00		6	.	.
CARRYING COST PER UNIT OF SALES INVENTORY	300.00 (D)		7	.	.
SALES COMMISSIONS O/O OF SALES PRICE	15.00		8	.	.
CLOSING COSTS PER UNIT	1000.00		9	.	.
CAPITAL COST PER UNIT	9825.00		10	.	.

DEVELOPMENT PERIOD (B)	1	2	3	4	5	6	7	8	9	10
BEGINNING INVENTORY	.	.	5.	5.	5.	.	.	.	.	.
PRODUCTION STARTS	25.	20.	20.	15.	.	.	.	.	.	.
PRODUCTION COMPLETIONS	.	25.	20.	20.	15.	.	.	.	.	.
SALES IN UNITS	.	20.	20.	20.	20.	.	.	.	.	.
UNITS SOLD FOR CASH	.	20.	20.	20.	20.	.	.	.	.	.
PRICE PER UNIT	17900.	17900.	18795.	19690.	20585.	.	.	.	.	.
REVENUE FROM CASH SALES	.	358000.	375900.	393800.	411700.	.	.	.	.	.
UNITS SOLD ON LAND CONTRACTS	.	.	.	.	.	.	.	.	.	.
DOWN PAYMENT RECEIVED	.	.	.	.	.	.	.	.	.	.
ACCOUNTS RECEIVABLE ADDED	.	.	.	.	.	.	.	.	.	.
SALES COSTS										
COMMISSIONS PAID	.	53700.	56385.	59070.	61755.	.	.	.	.	.
CLOSING COSTS	.	20000.	20000.	20000.	20000.	.	.	.	.	.
NET CASH GENERATED FROM SALES	.	284300.	299515.	314730.	329945.	.	.	.	.	.
RUNOFF OF LAND CONTRACT SALES										
INTEREST	.	.	.	.	.	.	.	.	.	.
PRINCIPAL	.	.	.	.	.	.	.	.	.	.
PERIOD END ACCOUNTS RECEIVABLE	.	.	.	.	.	.	.	.	.	.
REAL ESTATE TAXES ON INVENTORY	.	1329.	2791.	2923.	1528.	.	.	.	.	.
CARRYING COST OF INVENTORY	.	750.	1500.	1500.	750.	.	.	.	.	.
CAPITAL COST OF IMPROVEMENTS	245625.	206325.	216150.	169480.	.	.	.	.	.	.
TOTAL CASH REVENUE	-245625.	75896.	79074.	140827.	327667.	.	.	.	.	.

2 BR CONDOMINIUM

SUMMARY OF INPUTS

(B)

LOT SIZE--SQUARE FEET	750.
LOT SIZE--ACRES	.01
PERCENT SOLD FOR CASH EACH YEAR	100.00
O/O DOWN REQUIRED ON LAND CONTRACT SALES	.00
INTEREST RATE ON LAND CONTRACT SALES	.00
TERM IN YEARS ON LAND CONTRACT SALES	.00
CARRYING COST PER UNIT OF SALES INVENTORY	300.00
SALES COMMISSIONS O/O OF SALES PRICE	15.00
CLOSING COSTS PER UNIT	1000.00
CAPITAL COST PER UNIT	12825.00

(D)

(A)

YEAR	SALES PRICE	NO. UNITS SOLD
1	22500.	.
2	22500.	20.
3	23625.	20.
4	24750.	20.
5	25875.	20.
6	.	.
7	.	.
8	.	.
9	.	.
10	.	.

(B)

DEVELOPMENT PERIOD	1	2	3	4	5	6	7	8	9	10
BEGINNING INVENTORY	.	.	5.	5.	5.	.	.	.	.	.
PRODUCTION STARTS	25.	20.	20.	15.	.	.	.	.	.	.
PRODUCTION COMPLETIONS	.	25.	20.	20.	15.	.	.	.	.	.
SALES IN UNITS	.	20.	20.	20.	20.	.	.	.	.	.
UNITS SOLD FOR CASH	.	20.	20.	20.	20.	.	.	.	.	.
PRICE PER UNIT	22500.	22500.	23625.	24750.	25875.	.	.	.	.	.
REVENUE FROM CASH SALES	.	450000.	472500.	495000.	517500.	.	.	.	.	.
UNITS SOLD ON LAND CONTRACTS	.	.	.	.	.	.	.	.	.	.
DOWN PAYMENT RECEIVED	.	.	.	.	.	.	.	.	.	.
ACCOUNTS RECEIVABLE ADDED	.	.	.	.	.	.	.	.	.	.
SALES COSTS										
COMMISSIONS PAID	.	67500.	70875.	74250.	77625.	.	.	.	.	.
CLOSING COSTS	.	20000.	20000.	20000.	20000.	.	.	.	.	.
NET CASH GENERATED FROM SALES	.	362500.	381625.	400750.	419875.	.	.	.	.	.
RUNOFF OF LAND CONTRACT SALES										
INTEREST	.	.	.	.	.	.	.	.	.	.
PRINCIPAL	.	.	.	.	.	.	.	.	.	.
PERIOD END ACCOUNTS RECEIVABLE	.	.	.	.	.	.	.	.	.	.
REAL ESTATE TAXES ON INVENTORY	.	1670.	3508.	3675.	1921.	.	.	.	.	.
CARRYING COST OF INVENTORY	.	750.	1500.	1500.	750.	.	.	.	.	.
CAPITAL COST OF IMPROVEMENTS	320625.	269325.	282150.	221230.	.	.	.	.	.	.
TOTAL CASH REVENUE	-320625.	90754.	94466.	174345.	417204.	.	.	.	.	.

LAND DEVELOPMENT CASH FLOW ANALYSIS FOR--WATER RESOURCES UNIT STUDY

AGGREGATE RESULTS

DEVELOPMENT PERIOD	1	2	3	4	5	6	Total	% of sales
REVENUE FROM CASH SALES	.	2798000.	2937900.	3005800.	3118200.	1584000.	13,443,900	100%
DOWNPAYMENT RECEIVED	.	.	.	.	.	.		
ACCOUNTS RECEIVABLE ADDED	.	.	.	.	.	.		
SALES COSTS								
COMMISSIONS PAID	.	419700.	440685.	450870.	467730.	237600.	2,016,585	15
CLOSING COSTS	.	149000.	149000.	149000.	149000.	76500.	672,500	05
RUNOFF OF LAND CONTRACT SALES								
INTEREST	.	.	.	.	.	.		
PRINCIPAL	.	.	.	.	.	.		
PERIOD END ACCOUNTS RECEIVABLE	.	.	.	.	.	.		
CASH FROM OPERATIONS	.	2229300.	2348220.	2405930.	2501470.	1269900.	10,754,820	80
LESS CASH OUTLAYS								
CARRYING COSTS--RAW LAND	1650.	.	.	.	.	.	1,650	00
CARRYING COSTS--INVENTORY	.	5000.	10000.	10000.	7250.	2250.	34,500	00
REAL ESTATE TAX--RAW LAND	6311.	.	.	.	.	.	6,311	00
REAL ESTATE TAXES--INVENTORY	.	10387.	21813.	22317.	17456.	5880.	77,853	01
MANAGEMENT + ADMIN. COSTS	175001.	521312.	551400.	541116.	494055.	237600.	2,520,484	19
NEW ALLOCATED CAPITAL OUTLAYS	1069370.	898275.	941050.	821960.	263250.	.	3,993,905	30
NEW GENERAL CAPITAL OUTLAYS	680640.	117852.	166100.	80500.	.	.	1,045,092	08
NET CASH REVENUE	-1932970.	676488.	657860.	930050.	1719470.	1024170.	3,075,068	23
PROJECT DEBT STRUCTURE								
TOTAL INITIAL BALANCE	.							
BALANCE END OF YEAR	1750010.	1262130.	865280.	263740.	.	.		
TOTAL PRINCIPAL PAYMENTS	.	1504000.	1504000.	1504000.	526990.	.	5,038,990	37
TOTAL INTEREST PAID ON PROJ.	105000.	207422.	181013.	133550.	81556.	.	708,541	05
INTEREST ADDED TO LOAN BAL.	.	.	.	.	.	.		
NET CASH FROM DEBT INCURRED	1750010.	1016120.	1107150.	902460.	263250.	.	5,038,990	37
CASH AVAILABLE BEFORE TAXES	-287960.	-18820.	80000.	194960.	1374180.	1024170.	2,366,530	18
CAPITAL COST OF IMPROVEMENTS								
PRORATED TO UNITS SOLD	.	898275.	930354.	941050.	983825.	351000.	4,104,504	31
GENERAL CAPITAL COST								
PRORATED TO UNITS SOLD	.	166181.	220327.	256809.	266412.	135336.	1,045,065	08
LAND COST PRORATED TO UNITS SOLD	.	88452.	92875.	95021.	98574.	50074.	424,996	03
TAXABLE INCOME FROM OPERATIONS	-288960.	331288.	339445.	405089.	551364.	487760.	2,114,946	16
ESTIMATED INCOME TAXES	.	159018.	162933.	194442.	264654.	234124.	1,015,171	08
TAX SAVINGS ON OTHER INCOME	138700.	.	.	.	.	.		
NET CASH AFTER TAXES	-177960.	-177838.	-82933.	518.	1109530.	790050.	1,900,098	14
REINVESTED EARNINGS	.	.	.	.	.	.		
WORKING CAPITAL LOAN BALANCE	177960.	355798.	438731.	438213.	.	.		
CASH AFTER TAXES FOR DIVIDENDS OR REINVESTMENT	.	.	.	.	671320.	790050.	1,461,370	11
DIVIDENDS PAID	.	.	.	.	671320.	790050.	1,461,370	11
NET AFTER TAX + DEBT REPAYMENT ON BULK SALES	-1247330.	-754872.	-484430.	-47947.	226103.	30.		
P.V. AT 20.0/0 OF EQUITY RETURNS	-923860.	-408630.	-164762.	92461.	476237.	649967.		

INTERNAL [redacted]E OF RETURN 19.1%