

JAMES A. GRAASKAMP COLLECTION OF TEACHING MATERIALS

V. INDUSTRY SEMINARS AND SPEECHES - SHORT TERM

- I. Other Presentations In Which Either The Date And /
Or Sponsoring Organization Is Missing
 1. Risk Management/Investment Related Topics
 - a. "Real Estate Financial Risk Management",
Princess Kaiulani Hotel, June 13, 1973

REAL ESTATE FINANCIAL RISK MANAGEMENT
Princess Kaiulani Hotel
Wednesday Afternoon Session
June 13, 1973

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

- I. Real estate investment decisions may often finally depend on a question of the expected rate of return and the risk incurred in pursuing that investment return. There is a natural tendency in appraisal to consider the net income figure and the over-all investment as fixed numbers--as conditions of certainty.
 - A. An investment in a bond can be defined as to when it begins in time, when it is sold, when coupons are collectable and total costs and total receipts under alternative outcomes. Thus, yield is easily computed and risk depends on whether you can rely on the promisor.
 - B. Real estate financial analysis seldom enjoys such a rigid set of financial specifications and therefore seldom enjoys reasonable conditions of certainty.
 - C. To talk about risk and compare it between investments implies some explicit measures rather than simply subjective doubt--expressed by a shrug of the shoulders.
 - D. Modern management defines risk as the potential variance between expectations and realizations, i.e., between pro forma prospects and historical balance sheet and P & L statements.
 1. Variance sometimes is a binary--yes-no question. You will or you won't receive zoning approval.
 2. Variance sometimes is the possible range around an average or a median--a distribution of alternative costs or revenue possibilities.
 - E. For ease of analysis there are two kinds of risks:
 1. Dynamic risks can produce profit or loss and are best controlled by the finesse of management execution of a plan.
 2. Static risks are those which can only cause a loss due to surprise upset of a plan.
 - F. Risk evaluation or comparison grows out of the function of risk management for an enterprise. Risk management has two objectives:
 1. Conservation of existing enterprise assets despite surprise events
 2. Realization of budgeted expectations despite surprise events
 - G. The process of risk management involves systematic and continuous:
 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

11. The risk management process is both a philosophy of inquiry or analysis and a systematic management process which is attempting to answer "WHAT IF ...?" questions, to anticipate surprise and to provide for a response or adjustment in advance of the contingency.
- A. Identification of significant exposures to loss can begin by using standard business documents as reminders, such as
1. Review of balance sheet accounts
 2. Review of profit and loss statement accounts
 3. Review of business organization or function chart
 4. Review of elements of financial feasibility analysis
- B. Significant has to do with potential loss frequency, loss severity, and degree of uncertainty.
1. Very frequent and minor become expense accounts
 2. Less frequent but predictable and major become reserves or budget allowances.
 3. Infrequent, uncertain but very severe become issues of risk management.
 4. A 50/50 probability is the most uncertain outcome.
- C. The alternative methods of avoiding loss which everyone subconsciously uses include:
1. Eliminate risk exposure
 2. Reduce frequency or severity of loss (mortgage loan closing process)
 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 (sale and lease-back, options, contingent sales)
- D. Selection of a risk management method depends on whether you are talking about a dynamic or static risk and the trade practices of a particular industry or business type.
1. A lease is a risk management contract.
 2. A pool plan syndication is risk management through combination.
 3. Some selections can be mathematical or statistical and others must be entrepreneurial.
- E. Real estate operations and management can become very complex risk management systems and the problem for the decision maker is to monitor the current progress of all the little details necessary for the execution of a risk management plan.
1. Some of these details are financial and that is primarily what we are talking about today. I am suggesting the theory of management and Bob is suggesting how data processing devices are beginning to make it possible to apply these theories in practice.
 2. We hope that the theory will have immediate practical application as you see relationships to your personal real estate problems but we also hope you will begin to see the trend of management theory as it begins to utilize the computer for better risk management.

3. It should be noted that the principles are appropriate to any enterprise and not just real estate. Real estate education has been too quick to be inbred, to regard its problems as unique, rather than to relate to the evolution of management science in general.
 4. Management theory in the abstract simply represents a careful structuring of the common sense which you have successfully applied to your own business.
- III. Real estate financial analysis involves the conversion of a product of space over time to flows of money over time from a real estate enterprise which involves both large amounts of capital and large amounts of managerial services.
- A. In forecasting the finance elements there is an infinite number of details so one must over simplify by means of modeling and then determine the key assumptions which need to be made.
 - B. The purchase of any property and investment real estate in particular is the result of the decision maker "buying" a set of assumptions. A set of assumptions implies conditions of uncertainty--the possibility of variance--hence, risk.
 - C. To model anything, say a financial model for the computer, certain questions should be emphasized:
 1. What is the problem or question which needs to be solved?
 2. What data is available which might be relevant?
 3. What theory or logical framework best organizes the data to focus on the question?
 4. What is the cost/benefit ratio of the model outputs?
 5. What is the best way to communicate the recommendation with credibility?
 6. What are the limitations of the model assumptions?
 - D. Basic elements of a real estate financial model which in turn identify the exposure for risk analysis might be as follows:
 1. Definition of desired profit centers
 2. Definition of a timeline over which events will still take place
 3. Assumptions on the capital budget and sequence of source and application of funds
 - a. Direct construction or purchase cost
 - b. Indirect and capitalized carrying cost
 4. Assumptions on operating budget and sequence of source and application
 - a. Pattern of sales revenues
 - b. Pattern of sales and operating expenses
 5. Financing plan holding power
 - a. Credit amounts and terms
 - b. Equity amounts and terms
 - c. Holding power
 6. Profits classified as to type and tax
 - a. Cash from operations
 - b. Cash from capital gains
 - c. Cash surplus from financing
 - d. Cash from tax savings on other income

- e. Cash from reduction or shift of fixed outlays
 - f. Indirect non-cash benefits
 - 7. Selected measures of profitability
 - a. Definition of investment
 - b. Definition of profit
 - 8. Selected measures of risk
 - a. Payback periods
 - b. Capacity for variance
 - c. Variance control
- IV. Control of time line risks in financial projections can be handled in a variety of ways or models which may or may not serve the client's purposes.
- A. The classic appraisal assumes a project has moved on the time line to completion and normal operation as of the date of the appraisal. This may be appropriate to the permanent loan position.
 - B. Management policy and strategy decisions may be concerned with which phases of the real estate continuum they should participate in. (Refer to Diagram A).
 - C. Financial analysis may be concerned with rate of return analysis which involves timing of outlays, timing of receipts and elapsed time of investment and reinvestment exposure. (See Diagrams marked as Exhibits 52, 54, 55 and 56).
 - D. Thus, risks inherent in time can be avoided, shifted, or controlled internally through feedback systems on the status of a project.
- V. There are so many variables in real estate investment which will have some variance beyond the ability of management to control that the permutations and combinations of alternative results become impossible to predict. Thus, statistics may be useful to forecast both the probable variance and to analyze a sample of alternative returns possible from a given investment.
- A. Last year we spent a day analyzing after tax cash-flow as is outlined in the flow chart in Figure 1, prepared by Professor Stephen Pyhrr. Such a model is heuristic or deterministic. One set of inputs based on experience leading to a single answer.
 - B. However, Figure 4 suggests an alternative kind of model which permits assumptions to be made which can have a certain range of variation around an average or median.
 - C. The computer makes the computation relatively efficiently and provides the accounting systems which can help measure variance experienced over time.
 - D. It is then possible to compare alternative projects as to their probability of yield and their relative liquidity in terms of payback and resale value. (Refer to model of Decision Process).
 - E. Refer to input and output of Pyhrr Apartment House Investment model. (Professor Stephen Pyhrr of the University of Texas School of Business).

DIAGRAM A

PROPERTY DEVELOPMENT ON TIME LINE FOR COMPARISON OF YIELD
TO VARIABLES WITHIN CONTROL OF DEVELOPER

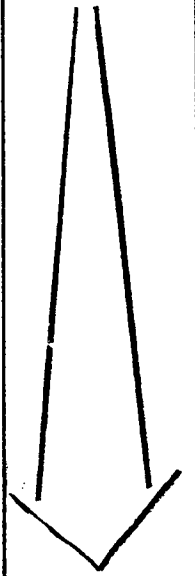

Progressive Development Functions	Profitability as % of Sales	Cumulative Investment	Turn-over Time	Profits as IRR% of \$'s Invested	Profit Derived from Internal or External Factors
Raw Land Control (LC)	500%	small	5 yrs.	25%	external
LC + Change of Use Master Plan (MP)	600%		4 yrs.	45 %	
LC + MP + Political Approvals (PA)	1000%		3 yrs.	60%	
LC + MP + PA + Financial Packaging (FP)	1100%		2 1/2 yrs.	70 %	
LC + MP + PA + FP + Land Improvements (LI)	1125%		2 yrs.	75%	
LC + MP + PA + FP + LI + Building Improvements (BI)	1145%		1 yr.	78%	
LC + MP + PA + FP + LI + BI + Property Management	1150%		1 mon.	79%	

Exhibit 52

CASH BUDGET #1 ADJUSTED FOR LEVERAGE OF \$3,000,000 CREDIT LINE AT ADD-ON RATE OF 8 PERCENT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<u>Gross Outlay</u>	<u>Credit Line Applied</u>	<u>Net Equity Cash Outlay</u>	<u>Gross Receipts</u>	<u>Reduction on Loan</u>	<u>Default Ratio</u>	<u>Net Cash Receipt to Equity Before Tax</u>	<u>Net Equity Cash</u>
6/31/73	\$2,277,000	\$2,000,000	12/31/74	\$1,055,000	\$900,000	85%	(\$224,000)
6/31/74	602,000	500,000	12/31/75	938,000	900,000	96	(187,000)
6/31/75	301,000	300,000	12/31/76	1,891,000	900,000	48	712,000
6/31/76	292,000	200,000	12/31/78	880,000	600,000	68	2,266,000
	\$3,472,000	\$472,000		\$6,938,000	\$4,200,000	61%	\$2,738,000

ENTER OUTLAYS
 ? 6,31,73,277000
 ? 6,31,74,102000
 ? 6,31,75,1000
 ? 6,31,76,92000

ENTER RECEIPTS
 ? 12,31,74,155000
 ? 12,31,75,38000
 ? 12,31,76,991000
 ? 12,31,77,1274000
 ? 12,31,78,230000

PERIOD OF 5 YEARS, 6 MONTHS, 1 DAYS
 FROM 6 30 73 TO 12 30 78
 TOTAL OUTLAYS 472000
 TOTAL RECEIPTS 2738000
 INTERNAL RATE IS 71.6089
 ENTER COST OF CAP RATE? .10
 NET PRESENT VALUE AT 10.00% IS *1429955.016
 ADJUSTED RATE IS 43.12%

Diagram B

EXHIBIT 54

CASH BUDGET #1 WITH A \$3,000,000 CREDIT LINE TESTED
BY A DELAY OF 1 YEAR FOR INITIAL CONSTRUCTION AND A 2 YEAR STRETCH-OUT OF SALES

	<u>Gross Outlay</u>	<u>Credit Line Applied</u>	<u>Net Equity Cash Outlay</u>		<u>Gross Receipts</u>	<u>Reduction on Loan</u>	<u>Default Ratio</u>	<u>Net Cash Receipt to Equity Before Tax</u>	<u>Net Equity Cash</u>
6/31/73	\$1,200,000	\$1,000,000	\$200,000						
			(320,000)*						
6/31/74	1,077,000	1,000,000	77,000						
			(135,000)*						
6/31/75	602,000	500,000	102,000	12/31/75	\$1,055,000	\$900,000	85%	\$155,000	(\$224,000)
			(162,000)*						
6/31/76	301,000	250,000	51,000	12/31/76	938,000	900,000	96%	38,000	(\$237,000)
			(31,000)*						
6/31/77	292,000	250,000	42,000	12/31/77	1,891,000	900,000	48%	991,000	712,000
			(71,000)*						
	<u>3,472,000</u>	<u>\$3,000,000</u>	<u>472,000</u>	12/31/78	1,100,000	900,000	82%	200,000	912,000
				12/31/79	1,074,000	600,000	56%	474,000	1,386,000
				12/31/80	880,000	-----	--	880,000	2,266,000
					<u>\$6,938,000</u>	<u>4,200,000</u>	61%	<u>\$2,738,000</u>	

* With 10 percent over-run in cost

EXHIBIT 55

CASH BUDGET #1 WITH A FULL YEAR DELAY IN CONSTRUCTION
AND AN ADDITIONAL ONE YEAR DELAY TO COMPLETE SALES

ENTER OUTLAYS

? 6,31,73,300000
? 6,31,74,77000
? 6,31,75,102000
? 6,31,76,51000
? 6,31,77,42000

ENTER RECEIPTS

? 12,31,75,155000
? 12,31,76,38000
? 12,31,77,991000
? 12,31,78,200000
? 12,31,79,474000
? 12,31,80,880000

PERIOD OF 7 YEARS, 6 MONTHS, 1 DAYS

FROM 6 30 73 TO 12 30 80

TOTAL OUTLAYS 472000

TOTAL RECEIPTS 2738000

INTERNAL RATE IS 50.3113

ENTER COST OF CAP RATE? .10

NET PRESENT VALUE AT 10.00% IS *1177502.641

ADJUSTED RATE IS 31.41%

EXHIBIT 56

CASH BUDGET #1 WITH A 10 PERCENT OVER-RUN FOR GROSS OUTLAYS
COVERED BY EQUITY FUNDS PLUS DELAYS IDENTIFIED IN EXHIBIT 54

ENTER OUTLAYS

? 6,2-31,73,320000
? 6,31,74,185000
? 6,31,75,162000
? 6,31,76,81000
? 6,31,77,71000

ENTER RECEIPTS

? 12,31,75,155000
? 12,31,76,38000
? 12,31,77,991000
? 12,31,78,200000
? 12,31,79,474000
? 12,31,80,880000

PERIOD OF 7 YEARS, 6 MONTHS, 1 DAYS

FROM 6 30 73 TO 12 30 80

TOTAL OUTLAYS 819000

TOTAL RECEIPTS 2738000

INTERNAL RATE IS 31.7604

ENTER COST OF CAP RATE? .10

NET PRESENT VALUE AT 10.00% IS *867387.219

ADJUSTED RATE IS 22.09%