JAMES A. GRAASKAMP COLLECTION OF TEACHING MATERIALS
VII. INDUSTRY EDUCATIONAL COURSES - LONG TERM
        A.   EDUCARE
        6.   Sample EDUCARE Assignments (1970-1974)

IMV PROGRAM

INVESTMENT MARKET VALUE ANALYSIS
DATA INPUT FORM

PROJECT ID: *EDUCARE SEMINAR PROBLEM ONE*

UNIVERSITY OF WISCONSIN

Date: *2 DECEMBER 1970*

ILLUSTRATION OF EFFECTS OF TAX STATUS OF PROPERTY INVESTORS: This problem illustrates the effects of income tax situations for different owners. Subject property is an older garden apartment with a future net income stabilized, for simplification, at $310,000. Seller is willing to take back a $300,000 deferred purchase money mortgage at 8%, interest only, for three years.

First analysis: Prospective purchasers are a syndicate of persons in the 50% tax bracket, without other investment income. If they are to obtain an after tax yield of 8½%, they can pay about $2,900,000; and if they refinanced the property at current mortgage rates, it would not materially raise the IMV of this property.

Second analysis: Purchasers are a syndicate of men in the 70% tax bracket due to numerous other investments in need of tax shelter. To obtain the same yield, since they can apply operating losses (tax shelter) to other income, this property can be priced at $3,429,000, or 18% more than to the first syndicate.

NOTE: The fallacy in these two analyses is in the assumption that the resale price of the property, ten years hence, shall be determined by the overall property depreciation rate of 7%, as shown in this input form. Does the property deserve the same OA Depreciation rate for both analyses?????

PREPARED BY:

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

PROJECT ID (Maximum 30 characters per line)

100 *EDUCARE SEMINAR PROBLEM ONE*

101 *UNIVERSITY OF WISCONSIN*

USED FOR ELLWOOD'S VALUATION

AVG. ANNUAL NET INCOME	BEFORE TAX YIELD	AFTER TAX YIELD
102 *310000*	*.14*	*.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*	*10*	*1*

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

(1)	(2)	(3)	(4)	(5)
104 *310000*				

(6)	(7)	(8)	(9)	(10)
105				

(11)	(12)	(13)	(14)	(15)
106				

(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 *6*	*.50*	*.05*	*.05*	*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 *1*	*.07*	*.03*

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	2	.48	2	25	0
112	2	.16	2	11	0
113	2	.16	1	5	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	1570311	.06	0	.13757961
119	1	300000	.08	36	.08000000
120					
121					
122					
123					

```
100  EDUCARE SEMINAR PROBLEM ONE
101  UNIVERSITY OF WISCONSIN
102  310000,.14,.085
103  1,10,1
104  310000
108  6,.50,.05,.05,3
109  1,.07,.03
110  3,0
111  2,.48,2,25,0
112  2,.16,2,11,0
113  2,.16,1,5,0
117  2
118  1,1570311,.06,0,.13757961
119  1,300000,.08,36,.08000000
```

INVESTMENT MARKET VALUE ANALYSIS
EDUCARE SEMINAR PROBLEM ONE
UNIVERSITY OF WISCONSIN

1ST RUN

PREPARED BY A COMPUTER IN CONSULTATION WITH
M. B. HODGES,JR   MCLEAN, VIRGINIA

****
INVESTMENT MARKET VALUE:

          BEFORE TAX YIELD OF 14.00%: $ 2909322

          AFTER TAX YIELD OF   8.50%: $ 2900765
****
                DETAIL FOR AFTER TAX IMV

FINANCING:

          MORTGAGES:
            EXISTING   6.00%   9 YRS   7 MONS $ 1570311
            EXISTING   8.00%   3 YRS   0 MONS $ 300000

          EQUITY CASH: $ 1030454

RESALE OF INVESTMENT IN 10 YEARS:

          ESTIMATED RESALE PRICE $ 2697712

            LESS: MORTGAGE BAL.   0
                  SALES COMMISSION   80931

          CASH REVERSION BEFORE TAXES $ 2616781

            LESS: CAPITAL GAINS TAX(ALT.)   326388
                  TAX ON RECAPTURED DEPR.   12259
                  TAX PREFERENCE TAX   13861

          CASH REVERSION AFTER TAXES $ 2264273

YR	NET INCOME	MORTGAGE INTEREST	BOOK DEPR.	TAXABLE INCOME	INCOME TAX	MORTGAGE AMORTIZE	CASH FLOW AFTER TAX
1	310000	114812	215184	-19996	0	125231	69957
2	310000	107088	205709	-2797	0	132955	69957
3	310000	98888	197090	14022	0	441155	-230043
4	310000	66182	192913	50905	30950	149861	63007
5	310000	56938	189928	63134	33145	159105	60812
6	310000	47125	94269	168606	88518	168918	5439
7	310000	36707	94269	179024	92519	179336	1438
8	310000	25646	94269	190085	99794	190397	-5837
9	310000	13902	94269	201829	105960	202141	-12003
10	310000	2400	94269	213331	111998	121212	74390

2DEC70

2ND RUN

OLD INPUT
READY
108 5,.70,.05,.05,3
118 1,2250000,.0975,260,0
REPLACE INPUT

(THESE NEW INPUT FIGURES ARE THE
(ONLY CHANGES MADE FOR 2ND RUN

FOR SECOND IMV ANALYSIS THE SYNDICATE PURCHASERS WERE CHANGED TO
REFLECT INDIVIDUALS HAVING SUBSTANTIAL INCOME FROM OTHER INVEST-
MENTS AND BEING IN THE 70% INCOME TAX BRACKET. FURTHER, A NEW
FIRST MORTGAGE IS OBTAINED, YET THE SELLER REMAINS WILLING TO
TAKE BACK A SECOND MORTGAGE OF THE SAME AMOUNT AND TERMS AS
HE WOULD HAVE DONE UNDER THE FIRST PREMISE.

2DEC 70

INVESTMENT MARKET VALUE ANALYSIS
EDUCARE SEMINAR PROBLEM ONE
UNIVERSITY OF WISCONSIN

PREPARED BY A COMPUTER IN CONSULTATION WITH
M. B. HODGES, JR   MCLEAN, VIRGINIA

****
INVESTMENT MARKET VALUE:

    BEFORE TAX YIELD OF 14.00%: $ 2922092

    AFTER TAX YIELD OF   8.50%: $ 3428576
****
          DETAIL FOR AFTER TAX IMV

FINANCING:

    MORTGAGES:
      EXISTING 9.75% 21 YRS 8 MONS $ 2250000
      EXISTING 8.00%   3 YRS 0 MONS $ 300000

    EQUITY CASH: $ 878576

RESALE OF INVESTMENT IN 10 YEARS:

    ESTIMATED RESALE PRICE $ 3188576

      LESS: MORTGAGE BAL.   1737163
           SALES COMMISSION   95657

    CASH REVERSION BEFORE TAXES $ 1355756

      LESS: CAPITAL GAINS TAX(ALT.) 510356
           TAX ON RECAPTURED DEPR. 19724
           TAX PREFERENCE TAX   15391

    CASH REVERSION AFTER TAXES $ 810285

YR	NET INCOME	MORTGAGE INTEREST	BOOK DEPR.	TAXABLE INCOME	INCOME TAX	MORTGAGE AMORTIZE	CASH FLOW AFTER TAX
1	310000	241976	254338	-186314	-133214	31874	169364
2	310000	238725	243139	-171864	-122882	35125	159032
3	310000	235143	232952	-158095	-113037	338707	-150813
4	310000	207196	228014	-125210	-89525	42654	149675
5	310000	202846	224487	-117333	-83893	47004	144043
6	310000	198053	111421	526	376	51797	59774
7	310000	192771	111421	5808	4152	57079	55998
8	310000	186950	111421	11629	8314	62900	51836
9	310000	180536	111421	18043	12900	69314	47250
10	310000	173467	111421	25112	17955	76383	42195

INVESTMENT MARKET VALUE ANALYSIS
DATA INPUT FORM

PROJECT ID: *EDUCARE SEMINAR PROBLEM FOUR*

UNIVERSITY OF WISCONSIN

Date: *3 DECEMBER 1970*

VALUATION PROBLEM: Five contiguous properties containing
numerous old store and walk-up apartments are ready for
assembly, and will be ripe for multistory commercial and
apartment redevelopment in five years, when a new subway
station is scheduled nearby. A broker, after many months of
negotiations, has informed his client, a large, diversified
corporation, that it will take $786,000 cash to swing the
deal; that the several owners will take a deferred purchase
money note for the balance, amortising over five years.
The raw land value for redevelopment in 1975, net after
demolition costs, is predicted to be $2,625,000. The corporate
purchaser wants a 10% equity return after taxes. How much
can be paid, assuming annual net property incomes as shown
in this analysis?

PREPARED BY:

M BH

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

PROJECT ID (Maximum 30 characters per line)

100 EDUCARE SEMINAR PROBLEM FOUR

101 UNIVERSITY OF WISCONSIN

USED FOR ELLWOOD'S VALUATION

AVG. ANNUAL NET INCOME	BEFORE TAX YIELD	AFTER TAX YIELD
102 185000	.15	.10

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	5	2

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

(1)	(2)	(3)	(4)	(5)
104 195000	195000	180000	170000	130000

(6)	(7)	(8)	(9)	(10)
105				

(11)	(12)	(13)	(14)	(15)
106				

(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 1	.504	.05	.05	1

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	2625000	0

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	6	900923

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

	ASSET CODE	ASSET VALUE ($ or %)	METHOD CODE	LIFE	SALVAGE (0 if none)
111	3	.07	1	18	1000
112	3	.12	1	15	2500
113	3	.09	1	8	1000
114	3	.14	1	14	4000
115	3	.37	1	16	5000
116	3	.21	1	5	0

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	6

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

	MORTGAGE CODE	KEY FIGURES ($ or %)	INTEREST RATE	TERM (Months)	ANNUAL CONSTANT
118	1	83106	.075	147	0
119	1	133837	.0675	0	.11264921
120	1	46479	.055	45	0
121	1	161656	.065	0	.11655543
122	1	364700	.0675	0	.12236616
123	3	786000	.10	60	0

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100  EDUCARE SEMINAR PROBLEM FOUR
101  UNIVERSITY OF WISCONSIN
102  185000,.15,.10
103  1,5,2
104  195200,195200,180000,170000,130000
108  1,.504,.05,.05,1
109  3,2625000,0
110  6,900923
111  3,.07,1,18,1000
112  3,.12,1,15,2500
113  3,.09,1,8,1000
114  3,.14,1,14,4000
115  3,.37,1,16,5000
116  3,.21,1,5,0
117  6
118  1,83106,.075,147,0
119  1,133837,.0675,0,.11264921
120  1,46479,.055,45,0
121  1,161656,.065,0,.11655543
122  1,364700,.0675,0,.12236616
123  3,786000,.10,60,0
```

INVESTMENT MARKET VALUE ANALYSIS
EDUCARE SEMINAR PROBLEM FOUR
UNIVERSITY OF WISCONSIN

PREPARED BY A COMPUTER IN CONSULTATION WITH
M. B. HODGES, JR   MCLEAN, VIRGINIA

****
INVESTMENT MARKET VALUE:

      BEFORE TAX YIELD OF 15.00%: $ 2216931

      AFTER TAX YIELD OF 10.00%: $ 2238231
****
            DETAIL FOR AFTER TAX IMV

FINANCING:

      MORTGAGES:

EXISTING	7.50%	12 YRS	3 MONS	$	83106
EXISTING	6.75%	13 YRS	7 MONS	$	133837
EXISTING	5.50%	3 YRS	9 MONS	$	46479
EXISTING	6.50%	12 YRS	7 MONS	$	161656
EXISTING	6.75%	11 YRS	11 MONS	$	364700
NEW 2ND	10.00%	5 YRS	0 MONS	$	662453

      EQUITY CASH: $ 786000

RESALE OF INVESTMENT IN 5 YEARS:

      ESTIMATED RESALE PRICE $ 2625000

      LESS: MORTGAGE BAL.   514654
            SALES COMMISSION   0

      CASH REVERSION BEFORE TAXES $ 2110346

      LESS: CAPITAL GAINS TAX(ALT.)   348093
            TAX ON RECAPTURED DEPR.   0
            TAX PREFERENCE TAX   1156

      CASH REVERSION AFTER TAXES $ 1761097

YR	NET INCOME	MORTGAGE INTEREST	BOOK DEPR.	TAXABLE INCOME	INCOME TAX	MORTGAGE AMORTIZE	CASH FLOW AFTER TAX
1	195200	112849	130463	-48112	-25441	158735	-50943
2	195200	98166	130463	-33429	-17677	173418	-58707
3	180000	82071	130463	-32534	-17203	189513	-74381
4	170000	64444	130463	-24907	-13170	203703	-84977
5	130000	45631	130463	-46094	-24374	212208	-103465

3 DEC 7

INVESTMENT MARKET VALUE ANALYSIS
DATA INPUT FORM

PROJECT ID: *EDUCARE SEMINAR PROBLEM FIVE*

UNIVERSITY OF WISCONSIN

Date: *2 DECEMBER 1970*

ANALYSIS OF AN ACTUAL SALE: In June 1970 a New York manufacturing corporation, with much taxable income, purchased a 306-unit, poorly located and unattractively planned garden apartment complex in Virginia, paying cash above existing 6% mortgages. The land is zoned commercial, but if it were vacant it would probably not sell at much more than if zoned for row houses. If the purchaser obtains a shift in the tax assessment, from land to buildings, reducing the land value to $268,000, what would be the IMV for an equity yield of .0875? The actual purchase price was $2,640,000.

Next, prepare a price-yield curve surrounding the actual purchase price, and while doing so, determine the yield at such purchase price. Do this under the assumption that the land assessment will be reduced.

Finally, what would a REIT have paid for this property, to have obtained the same equity yield (.0875), but failing to get the land valuation, as assessed, below its present $450,000? Note that in order for the REIT to achieve a suitable cash-flow-to-equity ratio, it would have had to refinance the property at the best available terms as of the purchase date.

PREPARED BY:

Th BW

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

PROJECT ID (Maximum 30 characters per line)

100 EDUCARE SEMINAR PROBLEM FIVE

101 UNIVERSITY OF WISCONSIN ▪

USED FOR ELLWOOD'S VALUATION

AVG. ANNUAL NET INCOME	BEFORE TAX YIELD	AFTER TAX YIELD
102 217000	.15	.0875

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	10	2

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

	(1)	(2)	(3)	(4)	(5)
104	220000	220000	218000	218000	216000

	(6)	(7)	(8)	(9)	(10)
105	216000	214000	214000	210000	210000

	(11)	(12)	(13)	(14)	(15)
106					

	(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)
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EXCESS DEPRECIATION RECAPTURE CODE:
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    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 1	.48	.10	.10	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)

5-2

APP/DEP CODE	APP/DEP AT RESALE ($ OR %)	SALES COMMISSION RATE (0 if none)
109 3	1860000	.0175

<u>DEPRECIABLE CAPITAL ASSETS:</u>

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	268000

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

	ASSET CODE	ASSET VALUE ($ or %)	METHOD CODE	LIFE	SALVAGE (0 if none)
111	3	.64	2	26	0
112	3	.19	2	13	0
113	3	.17	1	5	0
114					
115					
116					

<u>MORTGAGES:</u>

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 <u>either</u> the TERM <u>or</u> the ANNUAL CONSTANT must be provided except in the case of a
<u>balloon</u> for which <u>both</u> 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	1186414	.06	0	.09170491
119	1	855518	.06	0	.09713413
120					
121					
122					
123					

5-3

```
100  EDUCARE SEMINAR PROBLEM FIVE
101  UNIVERSITY OF WISCONSIN
102  217000,.15,.0875
103  1,10,2
104  220000,220000,218000,218000,216000
105  216000,214000,214000,210000,210000
108  1,.48,.10,.10,3
109  3,1860000,.0175
110  3,268000
111  3,.64,2,26,0
112  3,.19,2,13,0
113  3,.17,1,5,0
117  2
118  1,1186414,.06,0,.09171491
119  1,855518,.06,0,.09713413
```

INVESTMENT MARKET VALUE ANALYSIS
EDUCARE SEMINAR PROBLEM FIVE
UNIVERSITY OF WISCONSIN

PREPARED BY A COMPUTER IN CONSULTATION WITH
M. B. HODGES, JR   MCLEAN, VIRGINIA

****
INVESTMENT MARKET VALUE:

     BEFORE TAX YIELD OF 15.00%: $ 2357132

     AFTER TAX YIELD OF   8.75%: $ 2492436
****
          DETAIL FOR AFTER TAX IMV

FINANCING:

    MORTGAGES:
      EXISTING 6.00% 17 YRS 9 MONS $ 1186414
      EXISTING 6.00% 16 YRS 1 MONS $ 855518

    EQUITY CASH: $ 450504

RESALE OF INVESTMENT IN 10 YEARS:

    ESTIMATED RESALE PRICE $ 1860000

      LESS: MORTGAGE BAL.   1094217
          SALES COMMISSION   32550

    CASH REVERSION BEFORE TAXES $ 733233

      LESS: CAPITAL GAINS TAX(ALT.)   231206
          TAX ON RECAPTURED DEPR.   13867
          TAX PREFERENCE TAX   0

    CASH REVERSION AFTER TAXES $ 488160

YR	NET INCOME	MORTGAGE INTEREST	BOOK DEPR.	TAXABLE INCOME	INCOME TAX	MORTGAGE AMORTIZE	CASH FLOW AFTER TAX
1	220000	120576	184713	-85289	-45373	71336	73461
2	220000	116176	177515	-73691	-39203	75736	67291
3	218000	111504	170851	-64355	-34236	80408	60324
4	218000	106545	165877	-54422	-28952	85367	55040
5	216000	101279	163039	-48318	-25705	90633	49793
6	216000	95689	84706	35605	18941	96223	5147
7	214000	89755	84171	40074	21319	102157	769
8	214000	83454	84171	46375	24671	108458	-2583
9	210000	76765	84171	49064	26102	115147	-8014
10	210000	69662	84171	56167	29880	122250	-11792

OLD INPUT
READY
103 2,10,2
REPLACE INPUT   (COMPUTER IS NOW IN OPERATION CODE 2, PREPARED
                        TO ASK USER FOR A NUMBER OF TRIAL IMV AMOUNTS,
                        TO GIVE USER THE AFTER TAX YIELD FOR EACH)

2 DEC 70-2

WHAT IS TRIAL IMV AMOUNT NO 1 (0=STOP)?2564000

AFTER TAX YIELD 6.92%
DO YOU WANT DETAIL(0=NO,1=YES)?0

WHAT IS TRIAL IMV AMOUNT NO. 2 (0=STOP)?2650000
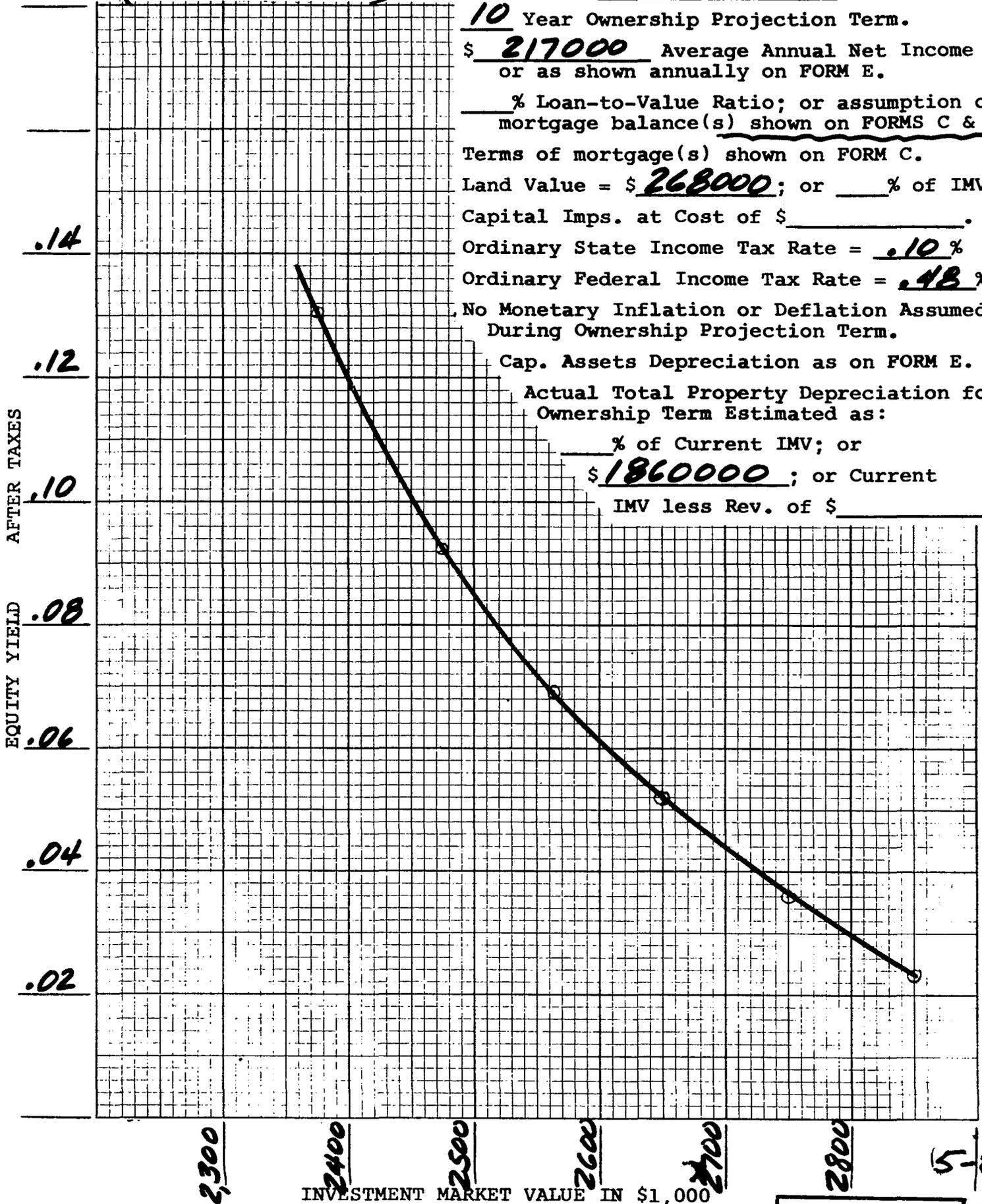
AFTER TAX YIELD 5.19%
DO YOU WANT DETAIL(0-NO,1=YES)?0

WHAT IS TRIAL IMV AMOUNT NO. 3 (0=STOP)?2475000

AFTER TAX YIELD 9.27%
DO YOU WANT DETAIL(0=NO,1=YES)?0

WHAT IS TRIAL IMV AMOUNT NO. 4 (0=STOP)?2750000

AFTER TAX YIELD 3.60%
DO YOU WANT DETAIL)0=NO,1=YES)?0

WHAT IS TRIAL IMV AMOUNT NO. 5 (0=STOP)?2350000

AFTER TAX YIELD 13.07%
DO YOU WANT DETAIL(0=NO,1=YES)?0

WHAT IS TRIAL IMV AMOUNT NO. 6 (0=STOP)?2850000

AFTER TAX YIELD 2.33%
DO YOU WANT DETAIL(0=NO,1=YES)?0

(EDUCARE FIVE)

Investment Criteria

_10_ Year Ownership Projection Term.

$ __217000__ Average Annual Net Income
or as shown annually on FORM E.

____% Loan-to-Value Ratio; or assumption of
mortgage balance(s) shown on FORMS C & D

Terms of mortgage(s) shown on FORM C.

Land Value = $ __268000__ ; or ____% of IMV.

Capital Imps. at Cost of $_____.

Ordinary State Income Tax Rate = __.10__ %

Ordinary Federal Income Tax Rate = __.48__ %

No Monetary Inflation or Deflation Assumed
During Ownership Projection Term.

Cap. Assets Depreciation as on FORM E.

Actual Total Property Depreciation for
Ownership Term Estimated as:

____% of Current IMV; or

$ __1860000__ ; or Current

IMV less Rev. of $_____.

Y-axis: EQUITY YIELD — AFTER TAXES: .02, .04, .06, .08, .10, .12, .14

X-axis: INVESTMENT MARKET VALUE IN $1,000: 2,300, 2,400, 2,500, 2,600, 2,700, 2,800

(Rev 7/17/70)

15-8

FORM G

2 DEC 70-2

INVESTMENT MARKET VALUE ANALYSIS
EDUCARE SEMINAR PROBLEM FIVE
UNIVERSITY OF WISCONSIN

PREPARED BY A COMPUTER IN CONSULTATION WITH
M. B. HODGES,JR   MCLEAN, VIRGINIA

****
INVESTMENT MARKET VALUE:

          BEFORE TAX YIELD OF 15.00%: $ 1875093

          AFTER TAX YIELD OF   8.75%: $ 2095923
****
               DETAIL FOR AFTER TAX IMV

FINANCING:

          MORTGAGES:
            NEW 1ST   10.25% 25 YRS   0 MONS $ 1571942

          EQUITY CASH: $ 523981

RESALE OF INVESTMENT IN 10 YEARS:

          ESTIMATED RESALE PRICE $ 1860000

             LESS: MORTGAGE BAL.   1336034
                   SALES COMMISSION   32550

          CASH REVERSION BEFORE TAXES $ 491416

             LESS: CAPITAL GAINS TAX(STD.)   149296
                   TAX ON RECAPTURED DEPR.   8291
                   TAX PREFERENCE TAX   15355

          CASH REVERSION AFTER TAXES $ 318474

YR	NET INCOME	MORTGAGE INTEREST	BOOK DEPR.	TAXABLE INCOME	INCOME TAX	MORTGAGE AMORTIZE	CASH FLOW AFTER TAX
1	220000	160466	136674	-77140	-33170	14281	78423
2	220000	158931	131348	-70279	-30219	15816	75472
3	218000	157231	126417	-65648	-28228	17516	71481
4	218000	155349	122737	-60086	-25836	19398	69089
5	216000	153265	120637	-57902	-24897	21482	66150
6	216000	150956	62676	2368	1018	23791	40235
7	214000	148400	62280	3320	1427	26347	37826
8	214000	145569	62280	6151	2644	29178	36609
9	210000	142434	62280	5286	2272	32313	32981
10	210000	138961	62280	8759	3766	35786	31487

2DEC70-2

```
OLD INPUT
READY
103 1,10,2                    (PLACES COMPUTER BACK INTO CODE 1 OPERATION
108 5,.40,.04,.05,3           WITH NEW DATA FOR A REAL ESTATE INVESTMENT
110 3,450000                  TRUST AS THE PROSPECTIVE PURCHASER.
117 1                         NEW FINANCING REQUIRED TO GET THE REIT
118 2,.75,.1025,300,0         A CASH FLOW RETURN SATISFACTORY TO ITS
REPLACE INPUT                 STOCKHOLDERS)
```

Sample Mini mod Input + Output
Used during early 1970s in UMd Real Estate Program --
Forerunner to more sophisticated discounted cash flow
program

X

```
LINE 43
on at 17:03  10/02/70 FRIDAY    103
USER NUMBER,PASSWORD--DZN401,X




READY

RUN MIM DELETED
RUN MINIMOD

MINIMOD     17:04  10/02/70  FRIDAY   103


ENTER COMPANY OR PROJECT NAME
? UNIVERSITY PROPERTIES
ENTER ORIGINAL COST OF LAND
? 250000
ENTER ORIGINAL COST OF BUILDING
? 700000
DEPRECIATION METHODS INCLUDE 1. SUM OF THE YEARS DIGITS, 2. STRAIGHT LIN

E, 3. 1.25 DECLINING BALANCE, 4. 1.5 DECLINING BALANCE, AND 5. DOUBLE DE

CLINING BALANCE
ENTER % DEPRECIABLE, DEPRECIATION METHOD, STARTING YEAR, USEFUL LIFE
? 1,4,1,40
DO YOU HAVE OTHER COMPONENTS (YES OR NO)
? NO
ENTER MORTGAGE NAME, AND AMOUNT
? FIRST MORTGAGE,600000
ENTER MONTHLY PAYMENT, INTEREST RATE, BONUS INTEREST RATE
? 4500,.085,.01
ENTER START YEAR, END YEAR, AND TERM ON THIS MORTGAGE
? 1,10,30
DO YOU HAVE ANOTHER MORTGAGE (YES OR NO)
? NO
```

```
ENTER ANNUAL GROSS RENT, AND RATE OF GROWTH OF GROSS RENT
? 200000,.03
ENTER VACANCY RATE
? .05
ENTER ANNUAL EXPENSES, AND RATE OF GROWTH OF EXPENSES
? 60000,.02
ENTER REAL ESTATE TAXES, AND RATE OF GROWTH OF R.E. TAXES
? 10000,.02
ENTER PROJECT VALUE RATE OF GROWTH
? .01
ENTER WORKING CAPITAL LOAN INTEREST RATE
? .12
ENTER EXTRAORDINARY EXPENSES YEAR 1
? 0
ENTER MARGINAL INCOME TAX RATE
? .50
ENTER EQUITY DISCOUNT RATE
? .10
ENTER OPPORTUNITY COST OF CAPITAL
? .10
ALL INPUTS ARE IN DO YOU WISH TO MAKE ANY CHANGES BEFORE RUNNING (YES OR
 NO)
? NO
DO YOU WANT MORTGAGE SCHEDULES PRINTED (YES OR NO)
? YES
DO YOU WANT DEPRECIATION SCHEDULES PRINTED (YES OR NO)
? YES
MINI MODEL HAS FIVE PARTS; ENTER FIVE NUMBERS ) FOR NO PRINT, 1 FOR PRINT

? 1,1,1,1,1
MINI MODEL CALCULATES DATA FOR 10 YEARS, ONLY FOUR YEARS DATA IS PRINTED

, ENTER THE FOUR YEARS YOU WANT OUTPUT FOR
? 1,2,5,10
```

CASH FLOW ANALYSIS FOR UNIVERSITY PROPERT

MORTGAGE AMORTIZATION SCHEDULE FOR - - FIRST MORTGAGE
        MORTGAGE AMOUNT   600000.00
        INTEREST RATE   8.50
        MONTHLY PAYMENT   4500.00

YEAR	INTEREST PAYMENT	PRINCIPAL PAYMENT	BALANCE	BONUS INT PAYMENT	BONUS INT RATE
1	50880	3119	596879	2000	0.0033
2	50604	3395	593483	2060	0.0035
3	50304	3695	589787	2120	0.0036
4	49977	4022	585765	2180	0.0037
5	49622	4377	581386	2240	0.0038
6	49235	4764	576621	2300	0.0040
7	48813	5186	571435	2360	0.0041
8	48355	5644	565790	2420	0.0043
9	47856	6143	559646	2480	0.0044
10	47313	6686	552959	2540	0.0046

DEPRECIATION SCHEDULE FOR   BUILDING
        TOTAL COST   700000
        DEPRECIABLE COST   700000
        USEFUL LIFE   40

YEAR	DEPRECIATION TAKEN	UNDEPRECIATED BALANCE
1	26249	673750
2	25265	648484
3	24318	624166
4	23406	600759
5	22528	578231
6	21683	556547
7	20870	535677
8	20087	515589
9	19334	496254
10	18609	477645

TOTAL INITIAL INVESTMENT   950000
TOTAL MORTGAGE AMOUNT   600000
TOTAL INITIAL EQUITY   350000

1 YEAR	1	2	5	10
GROSS RENT	200000	206000	224000	254000
LESS VACANCY ALLOWANCE	10000	10300	11200	12700
EFFECTIVE GROSS INCOME	190000	195700	212800	241300
LESS REAL ESTATE TAXES	10000	10199	10799	11799
LESS EXPENSES	60000	61199	64799	70799
NET INCOME	120000	124300	137200	158700
LESS DEPRECIATION	26249	25265	22528	18609
LESS INTEREST	52880	52664	51862	49853
TAXABLE INCOME	40869	46369	62809	90237
2 PLUS DEPRECIATION	26249	25265	22528	18609
LESS PRINCIPAL PAYMENTS	3119	3395	4377	6686
CASH THROW-OFF	63999	68239	80959	102160
LESS TAXES	20434	23184	31404	45118
CASH FROM OPERATIONS	43565	45054	49555	57041
WORKING CAPITAL LOAN BALANCE	0	0	0	0
SPENDABLE CASH AFTER TAXES	43565	45054	49555	57041
TAX SAVINGS ON OTHER INCOME	0	0	0	0

3* *

	1	2	5	10
MARKET VALUE	950000	959500	988000	1035500
BALANCE OF LOANS	596879	593483	581386	552959
NET WORTH OF PROPERTY	353120	366016	406613	482540
CAPITAL GAIN	17500	44500	125500	269970
TAXES ON SALE	8749	19382	48509	86434

4* *

	1	2	5	10
& INIT EQUITY PAYBACK AFT TAX	.1245	0.2532	0.6651	1.4373
NET INCOME-MARKET VALUE RATIO	.1263	0.1295	0.1389	0.1533
RETURN ON NET WORTH BEFORE TAX	.1918	0.2298	0.2415	0.2538
RETURN ON NET WORTH AFTER TAX	.1084	0.1374	0.1532	0.1746
BASH RETRN ON ORIG CASH EQ B/T	.1829	0.1950	0.2313	0.2919
CASH RETRN ON ORIG CASH EQ A/T	.1245	0.1287	0.1416	0.1630
DEFAULT RATIO	.6300	0.6187	0.5886	0.5478
DEBT COVER RATIO	2.1429	2.2173	2.4395	2.8069

5* *

	1	2	5	10
P.V. OF THE PROJECT B/4 TAX	979200	1017071	1124180	1276355
P.V. OF THE PROJECT AFT TAX	952668	963314	997760	1054690

```
DO YOU WANT TO RERUN, (YES OR NO)
? YES
ENTER LINE NUMBER OF CHANGE
? 11
2 COMPONENTS HAVE BEEN INPUTED.  IF ONE IS TO BE CHANGED, ENTER ITS NUMB

ER.  TO ADD A COMPONENT, ENTER A 3
? 1
ENTER ORIGINAL COST OF LAND
? 200000
ANY MORE CHANGES (YES OR NO)
?YES
ENTER LINE NUMBER OF CHANGE
? 12
1 MORTGAGES HAVE BEEN ENTERED.  IF ONE IS TO BE CHANGED, ENTER ITS NUMBE

R.  TO ADD A MORTGAGE, ENTER A 2
? 1
ENTER MORTGAGE NAME, AND AMOUNT
? FIRST MORTGAGE,600000
ENTER MONTHLY PAYMENT, INTEREST RATE, BONUS INTEREST RATE
? 0,.08,0
ENTER START YEAR, END YEAR, AND TERM ON THIS MORTGAGE
? 1,10,30
ANY MORE CHANGES (YES OR NO)
? NO
DO YOU WANT MORTGAGE SCHEDULES PRINTED (YES OR NO)
? YES
DO YOU WANT DEPRECIATION SCHEDULES PRINTED (YES OR NO)
? NO
MINI MODEL HAS FIVE PARTS; ENTER FIVE NUMBERS 0 FOR NO PRINT, 1 FOR PRINT

? 1,1,1,0,1
MINI MODEL CALCULATES DATA FOR 10 YEARS, ONLY FOUR YEARS DATA IS PRINTED

, ENTER THE FOUR YEARS YOU WANT OUTPUT FOR
? 1,2,5,10
```

CASH FLOW ANALYSIS FOR UNIVERSITY PROPERT

MORTGAGE AMORTIZATION SCHEDULE FOR --FIRST MORTGAGE
    MORTGAGE AMOUNT   600000.00
    INTEREST RATE   8.00
    MONTHLY PAYMENT   4402.74

YEAR	INTEREST PAYMENT	PRINCIPAL PAYMENT	BALANCE	BONUS INT PAYMENT	BONUS INT RATE
1	47818	5014	594985	0	0.0000
2	47402	5430	589555	0	0.0000
3	46951	5881	583673	0	0.0001M
4	46463	6369	577304	0	0.0000
5	45934	6897	570405	0	0.0000
6	45362	7470	562935	"0	0.0000
7	44742	8090	554844	0	0.0000
8	44070	8762	546081	0	0.0000
9	43343	9489	536592	0	0.0000
10	42555	10276	526314	0	0.0000

TOTAL INITIAL INVESTMENT   900000
TOTAL MORTGAGE AMOUNT   600000
TOTAL INITIAL EQUITY   300000

1 YEAR	1	2	5	10
GROSS RENT	200000	206000	224000	254000
LESS VACANCY ALLOWANCE	10000	10300	11200	12700
EFFECTIVE GROSS INCOME	190000	195700	212800	241300
LESS REAL ESTATE TAXES	10000	10199	10799	11799
LESS EXPENSES	60000	61199	64799	70799
NET INCOME	120000	124300	137200	158700
LESS DEPRECIATION	25249	25265	22528	18609
LESS INTEREST	47818	47402	45934	42555
TAXABLE INCOME	45931	51631	68736	97534
2. PLUS DEPRECIATION	26249	25265	22528	18609
LESS PRINCIPAL PAYMENTS·	5014	5430	6897	10276
CASH THROW-OFF	67167	71467	84367	105867
LESS TAXES	22965	25815	34368	48767
CASH FROM OPERATIONS	44201	45651	49998	57099
WORKING CAPITAL LOAN BALANCE	0	0	0	0
SPENDABLE CASH AFTER TAXES	44201	45651	49998	57099
TAX SAVINGS ON OTHER INCOME	0	0	0	0

3* *

MARKET VALUE	900000	909000	936000	981000
BALANCE OF LAONS	594985	589555	570405	526314
NET WORTH OF PROPERTY	305014	319445	365594	454685
CAPITAL GAIN	17500	44000	123500	265470
TAXES ON SALE	8749	19257	48009	85309

5* *

P.V. OF THE PROJECT B/4 TAX	938346	984129	1111128	1286449
P.V. OF THE PROJECT AFT TAX	909514	926000	974703	1047057

```
DO YOU WANT TO RERUN, (YES OR NO)
? NO

TIME       5 SECS.

OFF
OFF AT 17:33
PROC. TIME...    5 SEC.
TERM. TIME...   29 MIN.
```

Step 1:   Read

The Deep-End Construction Company has an option to buy land at $50,000
for a 50-unit apartment building. They have not received final estimates
on the cost to construct the building or furniture but the building is
expected to be in the "old ball park" of $725,000 and furnishings will
run around $800 per unit.

Step 2:   Input to Mini-Mod worksheet

Certain items are fixed for purposes of analysis. Deep-End investors
have an opportunity cost of capital of 8% after taxes and desire a 15% rate
of return to equity. An FHA 297 loan is available for $720,000 at 7%
interest plus 1/2% insurance charge for 40 years. Analysis should cover
a 10-year projection for years 1, 2, 5, and 10. There is no staging of
the project. Working capital loan rate is 8%. Annual growth rate for
rents is estimated at 2 1/2%, expenses at 3%, and real estate taxes at 4%.
The building will be depreciated on 200% declining balance 50-year useful
life and furniture has a useful life of .6 years and will be depreciated
by sum-of-the-digits.

Step 3:   Go to terminal, sign on, and call for OLD REDATA

The remaining inputs for Mini-Mod worksheet showing the actual costs
incurred after the project was completed are available by calling for
OLD REDATA to obtain the following items:

1.   Personal income tax rate
2.   Extraordinary expenses
3.   Vacancy rate
4.   Annual gross rent
5.   Annual expenses
6.   Annual real extate taxes
7.   Project value growth rate
8.   Cost of building
9.   Cost of furnishing

(Note: the computer terminal will produce a different set of data for
each student based on a statistical model for picking numbers for the
unknown variables above. It will then be possible to combine the results
of each student into a range of possible alternative outcomes for the
project and class discussion will later explore the potentials of this
method for evaluating Project Risk)

Step 4: Go to terminal and prepare data file from worksheet for paper tape

Your sample file should look like the facsimile below. Be careful to use decimal points for all percentages and put "zeros" for items which have no data, such as staging year and ratio.

```
SDF 1          12:20CDT     08/02/72  Wednesday

01 SAMPLE DATA FILE 1
02 IMA STUDENT
03 .15,.12,.35
04 3,1,0,0,3400,.09,.09
05 170000,.025,31000,.03,26000,.04,.005
06 LAND
07 50000,0,0,1,0
08 BUILDING
09 720000,1.,5,1,50
10 FURNITURE
11 41200,1.,1,1,6
22 FHA 297 LOAN
23 720000,0,.075,0,1,40,40,0
```

Step 5: Dial GE, log-on, and create file with paper tape above

Step 6: Process file with OLD MEDIT PROCEDURE

Step 7: Run OLD MINI-MOD

Do not forget you want output for years 1, 2, 5, and 10. Call for selected outputs indicating 1,0,0,1,1,1,1

Step 8: Record results

When you have completed a satisfactory run of Mini-Mod record the following items of information from the results on the columnar sheets posted at the back of the room. The collected results of all alternative outcomes will then be analyzed statistically for range, average, and standard error to introduce risk analysis as forcasting statistical variance in class discussion.

EDUCARE I

Tuesday Morning   8/01/72 ?

Problem 1AF - Use of GRM in computing FMV

Subject property has a gross rent of $46,080* and an estimated
vacancy rate of 5%*. Annual expenses are $8400* and real estate
taxes are an additional $9000*. The market indicates that a gross
rent multiplier (GRM) of 6.0 is applicable. What is the FMV of the
property. Disregard financing.

Answer: FMV = (GRM) (Gross rents before vacancy)
              (6.0) ($46,080) = $276,480

* These facts will be expanded in the problems which follow.

Problem 2AF - Use of OAR in computing FMV

Now assume that the GRM is not known, but that the market indicates
that the overall capitalization rate (OAR) for similar properties is
.0975. (The OAR is the sum of the interest rate of return for the
entire property plus the building recapture rate and is computed
from comparable sales by dividing net operating income before
depreciation and debt service by the FMV of the property).

What is the FMV of the subject property using the facts given in
Problem 1AF?

Answer:

Gross rent	$46,080
Less vacancy	2,304
Effective gross income	$43,716

Less
Annual expenses	8400	
Real estate taxes	9000	17,400
Net operating income		26,376

Fair market value = $\frac{\text{Net operating income}}{\text{OAR}}$ = $\frac{26,376}{.0975}$ = $270,523

Problem 3AF - Composition of the OAR: interest rate of return plus
building recapture.

In Problem 2AF we've used an OAR of .0975. If we assume that this
rate, discovered in the market, was for buildings similar to the
subject property with a remaining useful life of 40 years and a
land-building ratio of 1:4, then what is the interest rate of return
and the building recapture rate included in the OAR of .0975?

Answer: The building recapture rate included in the OAR is a function of
remaining building life and the land-building ratio. Thus, the
building recapture rate included in the OAR is the product of the
building recapture rate and the ratio of building to total value.
Thus,

$(.025)(.80) = .020$ - building recapture rate included in the OAR.

If we subtract the building recapture rate included in the OAR from
the OAR we derive the interest rate of return of .0775.

$.0975 - .020 = .0775$

Problem 4GH - Introduction of debt financing in computing FMV: Band of
investment

Assume the same facts as in problem 1AF, except that neither the GRM
nor the OAR from the market is known, in addition assume that an 80%
mortgage is available at 7 3/4% and that an investor require a 12%
rate of return on his 20% equity position. Determine FMV by computing
the OAR using the band of investment approach. Net operating income
is $26,376.

Answer: The interest rate of return for the entire property is computed
as the weighted average of the 20% equity at 12% and the 80% loan at
7 3/4%. Thus,

Interest rate = (equity portion)(equity rate)+(loan portion)(loan rate)
of return

$= (.20)(.12)+(.80)(.0775) = .0860$

In order to determine the OAR, we must add the interest rate of return
(.08600) to the building recapture rate included in the OAR. Thus,

Interest rate of return from band of investment		.0860
Building recapture rate included in OAR = $(.025)(.80)$		.0200
OAR		.1060

$$\text{FMV} + \frac{\text{Net operating income}}{\text{OAR}} = \frac{26,376}{.106} = \$248,830$$

Problem 5GH - Debt financing is computing FMV: Simple Ellwood

Assume the factual situation in problem 1AF with a constant annual
income over a ten year projection period of $26,376. The equity
yield rate is 12% on a 20% equity position with an 80% mortgage at
7 3/4% and 20 year term. The property is expected to decline 10%
in value over the ten year projection period.
What is the FMV of the property?

Answer:
OAR=R=Y-MCI adj. for decline in value

$Y = .12$, equity yield rate

OAR=R=.12-(.80)(.039488)+(.10)(.056984) $M = 0.80$, mortgage loan ratio

OAR=R=.094394

$C = .039488$, mortgage coefficient (Table C,
p. 191, 20-yr amortization, 10 yr. projection,
12% equity yield, 7 3/4% interest.

$FMV = \dfrac{\text{net operating income}}{\text{OAR}}$

$.056984 = \dfrac{1}{s_n}$ from Table C, p. 191, 20 yr.

$= \dfrac{26,376}{.094384}$

amortization, 10 yr. projection, 12%

$= \$279,424$

equity yield.

Problem 5GH - Solution for mortgage coefficient C without using Table C.

$C = Y + P\dfrac{1}{s_n} - f$

Y = equity yield = .12
P = proportion of mortgage paid off in
    10 years (=.

$\dfrac{1}{s_n}$ sinking fund factor, 12%, 10 years,
    annually, p. 148, column 3 = .046984.
f = annual debt service, monthly, computed
as a multiple of 12 times monthly install-
ment to amortize 1; 7 3/4% interest,
20 years, monthly, page 77, col.6;(.008209)
(12) = .09852
I = mortgage interest rate = 7 3/4%

$P = \left(\dfrac{f}{I} - 1\right)\left(\dfrac{S_p - 1}{}\right)$

S_p = amount of 1 at compound interest,
7 3/4%, 10 years, monthly, page 77 =
2.165189

$= \left(\dfrac{.09852}{.0775} - 1\right)(2.165189-1)$

$= .316028$

Then $C = Y + P\dfrac{1}{s_n} - f$

$C = .12 + (.316028)(.056984) - .09852 = \underline{.039488}$

Problem 5GH - Lab Problem

    A. Using the facts given above, use the UW Ellwood program to compute C and FMV.

    B. Use the UW Ellwood program to compute C and FMV using the facts given above, except use the following financing:

        1st mortgage: $180,000, 20 year, 7 3/4%, 5 year balloon
        2nd mortgage: $15,000, 10 year, 8 1/2%, 5 year balloon
        Also: assume 5% decline in original value in five years

Each of these programs are to be turned in to Herm Kelting by Tuesday 9 P.M.

Problem 6GH - Use of the Ellwood J factor to determine FMV

Use the same factual situation in problem 5GH to determine the FMV of the property. Note that the use of the J factor from Table C_y assumes that the 10% decline in value is caused by a constant annual decrease in income.

$r = Y - MC$

r = capitalization rate before adjustment for decline in value
Y = equity yield = .12
M = loan ratio = .80
C = mortgage coefficient = .039488 from Table C, page 191, 20 years amortization, 10 year projection, 12% equity yield, 7 3/4% interest

$$R = \frac{r + (depr)\frac{1}{s_n}}{1 - (depr)\ (J)}$$

R = overall cap rate
depr = % decline in value during the projection period = .10

$$R = \frac{.08841+(.10)(.056984)}{1 - (.10)(.3655)}$$

$\frac{1}{s_n}$ = sinking fund factor, equity rate, projection period from Table C_y, page 279 = .056984

$$R = \frac{.094108}{.96345} = .097678 = OAR$$

J = .3655 from Table C_y, page 277.

$$FMV = \frac{net\ operating\ income}{OAR} = \frac{26,376}{.097678} = \$270,030$$

Problem 71Q - Use of Investment Market Value (IMV) program to determine value

Now, assume the same factual situation as in Problem 91Q with gross income of $46,080, operating expenses of $8400 and real estate taxes of $9000. Extraordinary expenses of $7625 yields first year net operating income of $18,751, second year net operating income of $26,634 and subsequent years income increasing at the differential rate between 2% growth in effective gross income, 2% growth in operating expenses, and a 5% growth in real estate taxes.

The owner is an individual in the 30% bracket and the capital gain rate is 15%. The estimated project appreciation is 13% (note that in problem 91Q the rate of project value growth of 1% yields an increase from $240,000, original cost to $271,700, or 13%). There is a 3% sales commission associated with the ultimate sale.

The five depreciable asset groupings are shown below:

Building	$165,300
Parking	7,200
Furnishings	13,200
Elevator	12,500
Transaction cost	1,800
	$200,000

A later factor will be a staged capital addition in the seventh year (minimal); at this time IMV is unable to stage capital addition or financing.

The project, for the purposes of this problem has a $180,000 mortgage at 7 3/4% with a 20 year term and a $15,000 second mortgage at 8 1/2% and a constant of .14800000 (must carry to 8 places).

What is the IMV, if the investors' desired rate of return is 12%?

Turn in a completed run to Herm Kelting

Problem 8IQ - After tax yield using the IMV program

Determine the after tax yield, if the following property costs are known:

Land & non-depreciable elevator	$40,000*
Building	165,300*
Elevator	12,500*
Furnishings	13,200
Parking	7,200*
Transaction costs	1,800
Total	$240,000

* Existing property items of time of sale; furnishings are to be added by new owner.

A completed run is required as a ticket for dinner, accuracy under pressure is a professional attribute!

Problem 8IQ - Lab Problem

Assume that the property could be acquired for 5% less than the existing asking price, although financing would remain the same. Assume further that the entire purchase price reduction is assigned to the building.

What effect would this have on IMV?

(Clue: you may reenter the old paper tape and replace line III.)

BLAKE APPRAISALS

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PROFESSIONAL APPRAISERS AND CONSULTANTS ● JOSEPH J. BLAKE AND ASSOCIATES, INC.

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WESTBURY, L. I., N. Y. 11590
334-8800

EDUCARE   SEMINAR

MARCH 17,1974 – MARCH 22,1974

DEMONSTRATION   CASE

PREPARED BY:

MARK I. ROTH

The following is just one example of the type of problem which is more easily solved through the use of a computerized investment analysis model.

Briefly the problem was as follows:

The subject was located on the East Coast of the United States and was a waterfront parcel. The area of the land was about 30 acres of which about 11 acres were upland.

The parcel was improved with various warehouse structures and three pier sheds. The only structures of any consequence were the pier sheds and a seven story, reinforced concrete, 265,000 Square Ft. loft.

After careful analysis of the market it was determined that the highest and best use was for general purpose industrial.

Page 1 of the following begins to determine exactly how to best improve the property.

The assignment was to determine the highest and best use of the subject property. The client was not well versed in real estate and the investment analysis served to prove our conclusions.

Due to the nature of the existing improvements the Appraiser must examine two possible alternatives of developing the subject.

1) Demolish Buildings #2, 3, 4, 5 and #6 and erect a 300' x 600' general purpose industrial facility.

2) Demolish all improvements except the pier structures and erect a 300' x 1000' general purpose industrial structure.

The Appraiser must now examine the economic advantages and disadvantages of each alternative.

Option 1

This option requires the demolition of Buildings numbered 2, 3, 4, 5 and 6. The total demolition costs, as per the demolition schedule, are $77,650. Adjusting upward for the small size of the demolition job, the applicable total is $85,400. The value of the land associated with this option is 280,000 S.F. at $2.50/S.F. or $700,000. The direct costs in constructing the 180,000 S.F. general purpose industrial building amounts to $1,770,000 when the indirect costs are added this amounts to $1,946,000. This brings the total investment to:

Land	$ 700,000.
Demolition	$ 85,400.
Improvement	$1,946,000.
Total	$2,731,400.

The total annual net income which could be derived from the structure is $360,000. The demolition costs can be added to the direct costs of construction and depreciated by the 150% declining balance method for a 40 year period. The indirect costs may be expensed in the year paid thereby reducing taxes in the first year. Market Value is estimated at $3,425,000 upon completion of construction and sale at the end of the projection:

```
***  P R O J E C T    S P E C I F I C A T I O N S  ***

PREPARED BY:
        _____
ATTN:
        _____

    1.   NUMBER OF YEARS
         TO BE PROJECTED  ...  10

    2.   INVESTORS
         PURCHASE PRICE (COST BASIS)  ...  2731400

    3.   FINANCING:
                    LOAN     INTEREST     PERIODS    # INT.    TERM OR
                    AMOUNT   RATE         PER YR     ONLY      PAYMENT

              (1) 2568750    9.500          12         0          25
    4.   EQUITY
         INVESTMENT (CASH DOWN)  ...  162650

    5. * TAX RATE
         FOR ORDINARY INCOME  ...  50.00 %

    6. * TAX RATE
         FOR LONG TERM GAINS  ...  30.00 %

    7. * CURRENT
         GROSS INCOME  ...  360000
         ( 0.00 % GROWTH RATE)

    8. * CURRENT
         OPERATING EXPENSES  ...  176000
```

9. AFTER TAX RETURN ON
    REINVESTMENT OF (CUMUL) NET SPENDABLE ... 7.00 %

10. DEPRECIATION

AMOUNT AVAILABLE	METHOD USED	LIFE IN YEARS	TYPE OF PROPERTY
1855400	150 %	40.0	COMML.

11. * RESIDUAL VALUE
    IN YEAR (10) IS ESTIMATED AT ... 3425000
    BEFORE SELLING EXPENSE OF 2.00 %

12. RESIDUAL VALUE WAS OBTAINED BY
     EXPLICIT ASSIGNMENT OF VALUE (3425000)

13. (*) ASTERISKED INPUT VARIABLES (BELOW)
     WERE SPECIFIED ON A YEAR BY YEAR BASIS:

YR	GROSS INCOME	OPER. EXPENSE (*)	NOI	% CAP RATE	MARKET VALUE	% APPREC	% TAX ORD	% TAX LONG
1	360000	176000	184000	6.59	2793913	2.29	50.00	30.00
2	360000	0	360000	12.60	2857856	2.29	50.00	30.00
3	360000	0	360000	12.32	2923263	2.29	50.00	30.00
4	360000	0	360000	12.04	2990167	2.29	50.00	30.00
5	360000	0	360000	11.77	3058602	2.29	50.00	30.00
6	360000	0	360000	11.51	3128603	2.29	50.00	30.00
7	360000	0	360000	11.25	3200206	2.29	50.00	30.00
8	360000	0	360000	11.00	3273449	2.29	50.00	30.00
9	360000	0	360000	10.75	3348367	2.29	50.00	30.00
10	360000	0	360000	10.51	3425000	2.29	50.00	30.00

TOT 3600000 176000 3424000
AVE 360000   17600   342400

///

D E C I S I O N E X   REAL ESTATE ANALYSIS   ///   COMMERCIAL

PURCHASE TERMS

THE PRICE FOR THIS PROPERTY IS $ 2731400. THE BUYER WILL PAY
$ 162650 IN CASH.
FINANCING CONSISTS OF A 25 YEAR FIRST MORTGAGE FOR $ 2568750
AT 9.50 % INTEREST WITH 12 PAYMENTS PER YEAR OF $ 22443 EACH.

PROJECTION ASSUMPTIONS

FIRST YEAR GROSS OPERATING INCOME (AFTER VACANCY ALLOWANCE) WILL
BE $ 360000, AND IS PROJECTED TO GROW 0.0 % PER YEAR.
FIRST YEAR OPERATING EXPENSES WILL BE $ 176000, AND IS PROJECTED
TO GROW 0.0 % PER YEAR.
THE TOTAL AVAILABLE FOR DEPRECIATION IS $ 1855400. THE PROPERTY
TYPE FOR PURPOSES OF DEPRECIATION RECAPTURE IS COMMERCIAL.
ESTIMATED USEFUL LIFE WILL BE 40 YEARS AND THE METHOD OF DEPRECIATION
IS 150 % DECLINING BALANCE.
SALE OF THE PROPERTY IN 10 YEARS IS PROJECTED AT $ 3425000, WHICH
IS EQUIVALENT TO 2.3 % APPRECIATION PER YEAR. A 2.0 % COMMISSION
AGAINST PROJECTED MARKET VALUE, IS REFLECTED IN THE YEAR OF SALE, SO
THAT THE FIGURES SHOWN ARE NET AFTER SELLING EXPENSES.

INVESTORS FINANCIAL CIRCUMSTANCES

A 50% EFFECTIVE TAX RATE FOR ORDINARY TAXABLE INCOME GENERATED
BY THE REAL ESTATE INVESTMENT IS ASSUMED. A 30% EFFECTIVE TAX RATE IS
ASSUMED FOR LONG TERM CAPITAL GAIN TAXATION.
THE INVESTOR ANTICIPATES THAT AFTER-TAX CASH DERIVING FROM THE
INVESTMENT, MAY BE REINVESTED AT 7.0 % AFTER-TAXES.

YR	GR OP INC	TOT EXP	NET OP INC	MARKET VALUE	MORTGAGE INT.	MORTGAGE PRINC.	GR SPENDABLE $$	GR SPENDABLE %%	GR EQ INCOME $$	GR EQ INCOME %%
1	360000	176000	184000	2738034	242901	26416	-85317	-52.5	-58901	-36.2
2	360000	0	360000	2800699	240279	29038	90683	61.6	119721	81.4
3	360000	0	360000	2864798	237397	31920	90683	34.9	122693	47.1
4	360000	0	360000	2930363	234229	35089	90683	24.0	125771	33.2
5	360000	0	360000	2997430	230747	38570	90683	18.0	129253	25.6
6	360000	0	360000	3066031	226919	42398	90683	14.2	133081	20.9
7	360000	0	360000	3136202	222711	46606	90683	11.7	137289	17.6
8	360000	0	360000	3207980	218085	51232	90683	9.8	141915	15.3
9	360000	0	360000	3281400	213000	56317	90683	8.4	147000	13.6
10	360000	0	360000	3356500	207411	61906	90683	7.3	152589	12.2

YR	DEPREC-IATION	SUBJECT TO RE-CAPTURE	TAXABLE INCOME	TAXES PAID	TAXES DEFERRED	REINV-ESTMENT INC.	AFTER TAX TOTAL RETURN	AFTER TAX %%	AFTER TAX NET WORTH	AFTER TAX IRR %%
1	69578	23193	-128478	-64239	27502	0	-15529	-9.5	147121	-9.5
2	66968	43776	52753	26376	43007	0	113003	76.8	260123	26.5
3	64457	61848	58146	29073	42181	3026	118474	45.5	378597	32.5
4	62040	77593	63731	31866	41413	7551	125609	33.2	504206	32.7
5	59713	90831	69540	34770	40700	12196	133046	26.4	637253	31.4
6	57474	101920	75607	37804	40040	16964	140803	22.1	778055	29.8
7	55319	110854	81971	40985	39434	21853	148895	19.1	926950	28.2
8	53244	117714	88671	44335	38878	26862	157340	17.0	1084290	26.8
9	51248	122576	95752	47876	38373	31986	166157	15.3	1250447	25.4
10	49326	125517	103263	441075	-351528	37222	175363	14.0	1425810	24.2

10 YEAR SUMMARY

    THE PORTION OF EQUITY OWNED BY THE INVESTOR IS INITIALLY 6.0 %,
AND IS 36.0 % AT THE END OF YEAR 10.
    CASH INVESTED GROWS FROM $ 162650 TO $ 1425810 DURING THIS PERIOD,
WHICH IS EQUIVALENT TO A 24.25 % COMPOUND RATE OF GROWTH, AFTER TAXES.
    107.1 % OF ORIGINAL INVESTMENT IS RECOVERED IN THE FORM OF CASH
AFTER TAXES, BY THE END OF YEAR 4.
    FIRST YEAR WITHOUT TAX SHELTER IS 1982, WHEN TAXABLE INCOME WILL
EXCEED CASH FLOW BY $ 5069.
    $ 468750 COULD BE REALIZED BY REFINANCING AT THE END OF 5 YEARS,
ASSUMING THE ORIGINAL RATIO OF DEBT TO EQUITY.
    SALE IN 1977 YIELDS OPTIMAL RATE OF RETURN (32.69 %), WITH CASH
TO INVESTOR OF $ 504206 NET OF SELLING EXPENSE, LOANS DUE, AND TAXES.

EXPLANATION OF COLUMN HEADINGS

Gross Operating Income is the amount of income projected for each year, after allowance for vacancy and credit losses.

Total Operating Expenses is the total for operating expenses projected for each year.

Net Operating Income is the amount of income remaining each year after vacancy and credit losses, and after deducting operating expenses.

Market Value is the value of this property, projected year by year. Market Value is determined by applying the appreciation rate, if any, to the purchase price, less selling expense, if any. As an alternative, an estimated selling price may be given in lieu of appreciation rate, and the equivalent appreciation rate will be computed by the system.

Mortgage Interest is the total interest expense incurred on loans outstanding for each year.

Mortgage Principal Payment is the total amortization expense on loans outstanding for each year. This portion of debt service is not deductible for tax purposes, but reduces the amount of loans due.

Gross Spendable $$ is the total amount each year before income taxes. The term Cash Flow is also used in this sense. Gross spendable equals net operating income less mortgage interest and amortization. This item is also shown as a percentage of investor's net worth for each year.

EXPLANATION OF COLUMN HEADINGS
(Continued)

Gross Equity Income is the sum of gross spendable and mortgage principal payment in each year. This item is also shown both as a dollar amount, and as a percentage of investor's net worth.

Depreciation is the total amount of depreciation taken each year for tax purposes.

Subject to Recapture is the amount of excess depreciation taken to date, which would be taxed at ordinary rates rather than at capital gain rates, if the property were sold in the given year. There is no recapture possibility when the straight-line method is used. Exposure to recapture declines to zero over time, at a rate depending on the type of property involved.

Taxable Income is the amount of income or shelter provided the investor each year relative to federal income taxation, which is produced by this investment.

Taxes Paid is the federal income tax paid each year on this property. A negative tax indicates a tax shelter. This item is computed by applying the ordinary tax rate to taxable income. In addition, taxes paid in year of sale would include a possible capital gain as well as depreciation recapture element.

EXPLANATION OF COLUMN HEADINGS
(Continued)

Deferred Taxes shows for each year the amount of taxes incurred this year, but due to be paid in year of sale. The calculation relates to capital gain and recapture taxation, and parallels the taxes paid approach.

Reinvestment Income is the return each year (on an after-tax basis) of net spendable relating to this investment.

Total Return is the total investment return each year, consisting of the sum of cash flow, principal payment, appreciation, reinvestment return, and tax shelter benefit, if any, less taxes paid this year and less provision for taxes relating to capital gains and possible depreciation recapture. This item is shown as a dollar amount and as a percentage of investor's net worth for the given year.

Net Worth shows the extent to which cash invested has grown in each year, after provision for selling expense, loans due, and all federal income taxes. This item is given as a dollar amount, and as well as a compound rate of growth of cash invested. This rate is also called the internal rate of return.

Next the new section of the property must be
analyzed along with the remaining portion to arrive at
the overall return for the entire parcel.

	New Section	Old Section	Total
Net Income	$ 360,000.	$ 255,000.	$ 615,000.
Depreciation	$2,031,400.	$ 168,600.	$2,200,000.
Investment Cost	$2,731,400.	$2,318,100.	$5,049,500.
Value	$3,425,000.	$2,318,100.	$5,743,100.

```
***  P R O J E C T     S P E C I F I C A T I O N S  ***

PREPARED BY:
              _____

ATTN:
          _____


    1.    NUMBER OF YEARS
          TO BE PROJECTED  ...  10


    2.    INVESTORS
          PURCHASE PRICE (COST BASIS)  ...  5049500

    3.    FINANCING:
                    LOAN      INTEREST      PERIODS    # INT.     TERM OR
                    AMOUNT      RATE        PER YR      ONLY      PAYMENT

              (1) 4020000     9.500          12          0          25
    4.    EQUITY
          INVESTMENT (CASH DOWN)  ...  1029500


    5. *  TAX RATE
          FOR ORDINARY INCOME  ...  50.00 %


    6. *  TAX RATE
          FOR LONG TERM GAINS  ...  30.00 %


    7. *  CURRENT
          GROSS INCOME  ...  615000
          (  0.00 % GROWTH RATE)


    8. *  CURRENT
          OPERATING EXPENSES  ...  176000
```

9. AFTER TAX RETURN ON
    REINVESTMENT OF (CUMUL) NET SPENDABLE ... 7.00 %

10. DEPRECIATION

AMOUNT AVAILABLE	METHOD USED	LIFE IN YEARS	TYPE OF PROPERTY
2200000	150 %	40.0	COMML.

11. * RESIDUAL VALUE
     IN YEAR (10) IS ESTIMATED AT ... 5743100
     BEFORE SELLING EXPENSE OF 2.00 %

12. RESIDUAL VALUE WAS OBTAINED BY
     EXPLICIT ASSIGNMENT OF VALUE (5743100)

13. (*) ASTERISKED INPUT VARIABLES (BELOW)
     WERE SPECIFIED ON A YEAR BY YEAR BASIS:

YR	GROSS INCOME	OPER. EXPENSE (*)	NOI	% CAP RATE	MARKET VALUE	% APPREC	% TAX ORD	% TAX LONG
1	615000	176000	439000	8.58	5114912	1.30	50.00	30.00
2	615000	0	615000	11.87	5181172	1.30	50.00	30.00
3	615000	0	615000	11.72	5248289	1.30	50.00	30.00
4	615000	0	615000	11.57	5316277	1.30	50.00	30.00
5	615000	0	615000	11.42	5385145	1.30	50.00	30.00
6	615000	0	615000	11.27	5454905	1.30	50.00	30.00
7	615000	0	615000	11.13	5525569	1.30	50.00	30.00
8	615000	0	615000	10.99	5597148	1.30	50.00	30.00
9	615000	0	615000	10.85	5669654	1.30	50.00	30.00
10	615000	0	615000	10.71	5743100	1.30	50.00	30.00
TOT	6150000	176000	5974000					
AVE	615000	17600	597400					

///

D E C I S I O N E X   REAL ESTATE ANALYSIS   ///   COMMERCIAL

PURCHASE TERMS

    THE PRICE FOR THIS PROPERTY IS $ 5049500. THE BUYER WILL PAY
$1029500 IN CASH.
    FINANCING CONSISTS OF A 25 YEAR FIRST MORTGAGE FOR $ 4020000
AT 9.50 % INTEREST WITH 12 PAYMENTS PER YEAR OF $ 22443 EACH.

PROJECTION ASSUMPTIONS

    FIRST YEAR GROSS OPERATING INCOME (AFTER VACANCY ALLOWANCE) WILL
BE $ 615000, AND IS PROJECTED TO GROW 0.0 % PER YEAR.
    FIRST YEAR OPERATING EXPENSES WILL BE $ 176000, AND IS PROJECTED
TO GROW 0.0 % PER YEAR.
    THE TOTAL AVAILABLE FOR DEPRECIATION IS $ 2200000. THE PROPERTY
TYPE FOR PURPOSES OF DEPRECIATION RECAPTURE IS COMMERCIAL.
ESTIMATED USEFUL LIFE WILL BE 40 YEARS AND THE METHOD OF DEPRECIATION
IS 150 % DECLINING BALANCE.
    SALE OF THE PROPERTY IN 10 YEARS IS PROJECTED AT $ 5743100, WHICH
IS EQUIVALENT TO 1.3 % APPRECIATION PER YEAR. A 2.0 % COMMISSION
AGAINST PROJECTED MARKET VALUE, IS REFLECTED IN THE YEAR OF SALE, SO
THAT THE FIGURES SHOWN ARE NET AFTER SELLING EXPENSES.

INVESTORS FINANCIAL CIRCUMSTANCES

    A 50% EFFECTIVE TAX RATE FOR ORDINARY TAXABLE INCOME GENERATED
BY THE REAL ESTATE INVESTMENT IS ASSUMED. A 30% EFFECTIVE TAX RATE IS
ASSUMED FOR LONG TERM CAPITAL GAIN TAXATION.
    THE INVESTOR ANTICIPATES THAT AFTER-TAX CASH DERIVING FROM THE
INVESTMENT, MAY BE REINVESTED AT 7.0 % AFTER-TAXES.

YR	GR OP INC	TOT EXP	NET OP INC	MARKET VALUE	MORTGAGE INT.	PRINC.	GR SPENDABLE $$	%%	GR EQ INCOME $$	%%
1	615000	176000	439000	5012614	380131	41341	17529	1.7	58869	5.7
2	615000	0	615000	5077548	376028	45444	193529	18.5	238972	22.9
3	615000	0	615000	5143324	371518	49954	193529	15.8	243482	19.9
4	615000	0	615000	5209951	366560	54911	193529	13.7	248440	17.6
5	615000	0	615000	5277442	361110	60361	193529	12.0	253890	15.8
6	615000	0	615000	5345807	355119	66352	193529	10.6	259881	14.2
7	615000	0	615000	5415057	348534	72937	193529	9.4	266466	13.0
8	615000	0	615000	5485205	341295	80176	193529	8.5	273705	12.0
9	615000	0	615000	5556261	333338	88133	193529	7.6	281662	11.1
10	615000	0	615000	5628238	324591	96880	193529	6.9	290409	10.3

YR	DEPREC- IATION	SUBJECT TO RE- CAPTURE	TAXABLE INCOME	TAXES PAID	TAXES DEFERRED	REINV- ESTMENT INC.	AFTER TAX TOTAL RETURN	%%	NET WORTH	IRR %%
1	82500	27500	-23631	-11815	19184	0	14614	1.4	1044114	1.4
2	79406	51906	159566	79783	48183	2054	177994	17.0	1222109	9.0
3	76429	73335	167054	83527	46947	10160	188944	15.5	1411053	11.1
4	73562	91897	174878	87439	45769	18571	200431	14.2	1611483	11.9
5	70804	107701	183086	91543	44649	27298	212486	13.2	1823970	12.1
6	68149	120850	191732	95866	43584	36348	225143	12.3	2049113	12.2
7	65593	131443	200873	100436	42572	45728	238437	11.6	2287550	12.1
8	63133	139576	210571	105286	41611	55446	252401	11.0	2539951	12.0
9	60766	145342	220896	110448	40700	65504	267074	10.5	2807025	11.8
10	58487	148829	231922	528997	-373199	75905	282493	10.1	3089518	11.6

10 YEAR SUMMARY

THE PORTION OF EQUITY OWNED BY THE INVESTOR IS INITIALLY 20.4 %, AND IS 40.2 % AT THE END OF YEAR 10.

CASH INVESTED GROWS FROM $1029500 TO $ 3089518 DURING THIS PERIOD, WHICH IS EQUIVALENT TO A 11.62 % COMPOUND RATE OF GROWTH, AFTER TAXES.

105.3 % OF ORIGINAL INVESTMENT IS RECOVERED IN THE FORM OF CASH AFTER TAXES, BY THE END OF YEAR 9.

FIRST YEAR WITHOUT TAX SHELTER IS 1980, WHEN TAXABLE INCOME WILL EXCEED CASH FLOW BY $ 7344.

$ 519223 COULD BE REALIZED BY REFINANCING AT THE END OF 5 YEARS, ASSUMING THE ORIGINAL RATIO OF DEBT TO EQUITY.

SALE IN 1979 YIELDS OPTIMAL RATE OF RETURN (12.16 %), WITH CASH TO INVESTOR OF $2049113 NET OF SELLING EXPENSE, LOANS DUE, AND TAXES.

Option One provides an optimal rate of return of about 12% after 6 years. The cash investment required $1,029,500 or less than land value.

This investment will have grown to $3,089,518 in ten years, almost three times the original investment.

The total return after 10 years is 11.6%.

Option 2

This option requires the demolition of Buildings numbered 1, 2, 3, 4, 5, 6, 7 and 8. The cost of this demolition as per the schedule is $580,000. This proposal involves the erection of a 300' x 1000' or 300,000 S.F. general purpose industrial structure.

The direct costs associated with construction of the building are $2,949,000 and the total cost including indirect costs is $3,244,000. The value of the land involved is $1,175,000. The property would generate a net rent of $600,000. Market Value is estimated at $5,714,000 upon completion of construction and at time of sale.

Therefore the total investment would be:

Land	$1,175,000.
Demolition	$ 580,000.
Construction	$3,244,000.
Total	$4,999,000.

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***  P R O J E C T     S P E C I F I C A T I O N S  ***

PREPARED BY:
                _____
ATTN:
        _____


    1.    NUMBER OF YEARS
          TO BE PROJECTED  ...  10


    2.    INVESTORS
          PURCHASE PRICE (COST BASIS)  ...  4999000


    3.    FINANCING:
                    LOAN     INTEREST     PERIODS    # INT.    TERM OR
                    AMOUNT     RATE       PER YR      ONLY     PAYMENT


              (1) 4285000    9.500          12          0          25
    4.    EQUITY
          INVESTMENT (CASH DOWN)  ...  714000


    5. *  TAX RATE
          FOR ORDINARY INCOME  ...  50.00 %


    6. *  TAX RATE
          FOR LONG TERM GAINS  ...  30.00 %


    7. *  CURRENT
          GROSS INCOME  ...  600000
          (  0.00 % GROWTH RATE)


    8. *  CURRENT
          OPERATING EXPENSES  ...  295000
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9.   AFTER TAX RETURN ON
     REINVESTMENT OF (CUMUL) NET SPENDABLE ... 7.00 %

10. DEPRECIATION

AMOUNT AVAILABLE	METHOD USED	LIFE IN YEARS	TYPE OF PROPERTY
3529000	150 %	40.0	COMML.

11. * RESIDUAL VALUE
     IN YEAR (10) IS ESTIMATED AT ... 5714000
     BEFORE SELLING EXPENSE OF 2.00 %

12. RESIDUAL VALUE WAS OBTAINED BY
     EXPLICIT ASSIGNMENT OF VALUE (5714000)

13. (*) ASTERISKED INPUT VARIABLES (BELOW)
     WERE SPECIFIED ON A YEAR BY YEAR BASIS:

YR	GROSS INCOME	OPER. EXPENSE (*)	NOI	% CAP RATE	MARKET VALUE	% APPREC	% TAX ORD	% TAX LONG
1	600000	295000	305000	6.02	5066276	1.35	50.00	30.00
2	600000	0	600000	11.69	5134457	1.35	50.00	30.00
3	600000	0	600000	11.53	5203556	1.35	50.00	30.00
4	600000	0	600000	11.38	5273585	1.35	50.00	30.00
5	600000	0	600000	11.23	5344557	1.35	50.00	30.00
6	600000	0	600000	11.08	5416483	1.35	50.00	30.00
7	600000	0	600000	10.93	5489378	1.35	50.00	30.00
8	600000	0	600000	10.79	5563253	1.35	50.00	30.00
9	600000	0	600000	10.64	5638123	1.35	50.00	30.00
10	600000	0	600000	10.50	5714000	1.35	50.00	30.00

TOT	6000000	295000	5705000					
AVE	600000	29500	570500					

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.I: T

   D E C I S I O N E X   REAL ESTATE ANALYSIS   ///   COMMERCIAL

PURCHASE TERMS

     THE PRICE FOR THIS PROPERTY IS $ 4999000.   THE BUYER WILL PAY
$ 714000 IN CASH.
     FINANCING CONSISTS OF A 25 YEAR FIRST MORTGAGE FOR $ 4285000
AT   9.50 % INTEREST WITH 12 PAYMENTS PER YEAR OF $ 22443 EACH.

PROJECTION ASSUMPTIONS

     FIRST YEAR GROSS OPERATING INCOME (AFTER VACANCY ALLOWANCE) WILL
BE $ 600000, AND IS PROJECTED TO GROW 0.0 % PER YEAR.
     FIRST YEAR OPERATING EXPENSES WILL BE $ 295000, AND IS PROJECTED
TO GROW 0.0 % PER YEAR.
     THE TOTAL AVAILABLE FOR DEPRECIATION IS $ 3529000.   THE PROPERTY
TYPE FOR PURPOSES OF DEPRECIATION RECAPTURE IS COMMERCIAL.
ESTIMATED USEFUL LIFE WILL BE 40 YEARS AND THE METHOD OF DEPRECIATION
IS 150 % DECLINING BALANCE.
     SALE OF THE PROPERTY IN 10 YEARS IS PROJECTED AT $ 5714000, WHICH
IS EQUIVALENT TO 1.3 % APPRECIATION PER YEAR.   A 2.0 % COMMISSION
AGAINST PROJECTED MARKET VALUE, IS REFLECTED IN THE YEAR OF SALE, SO
THAT THE FIGURES SHOWN ARE NET AFTER SELLING EXPENSES.

INVESTORS FINANCIAL CIRCUMSTANCES

     A 50% EFFECTIVE TAX RATE FOR ORDINARY TAXABLE INCOME GENERATED
BY THE REAL ESTATE INVESTMENT IS ASSUMED.   A 30% EFFECTIVE TAX RATE IS
ASSUMED FOR LONG TERM CAPITAL GAIN TAXATION.
     THE INVESTOR ANTICIPATES THAT AFTER-TAX CASH DERIVING FROM THE
INVESTMENT, MAY BE REINVESTED AT 7.0 % AFTER-TAXES.

YR	GR OP INC	TOT EXP	NET OP INC	MARKET VALUE	MORTGAGE INT.	MORTGAGE PRINC.	GR SPENDABLE $$	GR SPENDABLE %%	GR EQ INCOME $$	GR EQ INCOME %%
1	600000	295000	305000	4964950	405189	44066	-144255	-20.2	-100189	-14.0
2	600000	0	600000	5031768	400816	48439	150745	22.9	199184	30.3
3	600000	0	600000	5099485	396008	53247	150745	18.3	203992	24.8
4	600000	0	600000	5168114	390724	58531	150745	15.2	209276	21.0
5	600000	0	600000	5237666	384915	64340	150745	12.8	215085	18.2
6	600000	0	600000	5308153	378529	70726	150745	11.0	221471	16.1
7	600000	0	600000	5379590	371510	77745	150745	9.5	228490	14.4
8	600000	0	600000	5451988	363793	85461	150745	8.3	236207	13.1
9	600000	0	600000	5525360	355312	93943	150745	7.4	244688	12.0
10	600000	0	600000	5599720	345988	103267	150745	6.6	254012	11.1

YR	DEPREC-IATION	SUBJECT TO RE-CAPTURE	TAXABLE INCOME	TAXES PAID	TAXES DEFERRED	REINV-ESTMENT INC.	AFTER TAX TOTAL RETURN	AFTER TAX %%	NET WORTH	IRR %%
1	132338	44113	-232527	-116263	38309	0	-56284	-7.9	657716	-7.9
2	127375	83262	71809	35905	66088	0	164010	24.9	821725	7.3
3	122598	117636	81394	40697	63969	6079	173122	21.1	994848	11.7
4	118001	147411	91276	45638	61944	14208	184531	18.5	1179379	13.4
5	113576	172762	101510	50755	60008	22560	196435	16.7	1375814	14.0
6	109317	193854	112154	56077	58160	31139	208861	15.2	1584675	.14.2
7	105217	210846	123273	61637	56395	39946	221841	14.0	1806516	14.2
8	101272	223893	134935	67467	54710	48979	235406	13.0	2041922	14.0
9	97474	233142	147214	73607	53104	58237	249587	12.2	2291509	13.8
10	93819	238736	160193	644356	-512687	67714	264416	11.5	2555926	13.6

10 YEAR SUMMARY

THE PORTION OF EQUITY OWNED BY THE INVESTOR IS INITIALLY 14.3 %, AND IS 36.0 % AT THE END OF YEAR 10.

CASH INVESTED GROWS FROM $ 714000 TO $ 2555926 DURING THIS PERIOD, WHICH IS EQUIVALENT TO A 13.60 % COMPOUND RATE OF GROWTH, AFTER TAXES.

116.5 % OF ORIGINAL INVESTMENT IS RECOVERED IN THE FORM OF CASH AFTER TAXES, BY THE END OF YEAR 8.

FIRST YEAR WITHOUT TAX SHELTER IS 1983, WHEN TAXABLE INCOME WILL EXCEED CASH FLOW BY $ 9448.

$ 564824 COULD BE REALIZED BY REFINANCING AT THE END OF 5 YEARS, ASSUMING THE ORIGINAL RATIO OF DEBT TO EQUITY.

SALE IN 1979 YIELDS OPTIMAL RATE OF RETURN (14.21 %), WITH CASH TO INVESTOR OF $1584675 NET OF SELLING EXPENSE, LOANS DUE, AND TAXES.

SENSITIVITY ANALYSIS
------SIGNIFICANT INFORMATION MAY BE OBTAINED BY VARYING THE
INVESTMENT ASSUMPTIONS, ONE BY ONE, OVER A RANGE OF POSSIBLE
VALUES.
    THE FOLLOWING SHOWS HOW 10 YEAR AFTER-TAX WORTH, AND
RATE OF RETURN VARY AS THE INTEREST RATE ON MORTGAGE 1 IS
VARIED FROM 7% TO 11%, WITH INTERVALS OF 1% :

INTEREST RATE	NET WORTH	RATE OF RETURN	CASH ON CASH
7.00	3211565	16.23	-8.18
8.00	2953861	15.26	-12.87
9.00	2690048	14.18	-17.72
10.00	2420463	12.98	-22.72
11.00	2145944	11.63	-27.87

    THE FOLLOWING SHOWS HOW 10 YEAR AFTER-TAX WORTH, AND
RATE OF RETURN VARY AS THE EQUITY GROWTH RATE IS VARIED FROM
MINUS 1% TO PLUS 3%, IN INTERVALS OF 1% :

APPREC- IATION RATE	NET WORTH	RATE OF RETURN	CASH ON CASH
-1.00	1737532	9.30	-20.20
-0.00	2065436	11.21	-20.20
1.00	2424218	13.00	-20.20
2.00	2816436	14.71	-20.20
3.00	3244833	16.35	-20.20

    THE FOLLOWING SHOWS HOW 10 YEAR AFTER-TAX WORTH, AND
RATE OF RETURN VARY AS GROSS INCOME IS REDUCED FROM 2% TO 10%,
IN INTERVALS OF 2% :

GROSS INCOME	NET WORTH	RATE OF RETURN	CASH ON CASH
588000	2473749	13.23	-21.88
576000	2391572	12.85	-23.57
564000	2309395	12.46	-25.25
552000	2227218	12.05	-26.93
540000	2145040	11.63	-28.61

    THE FOLLOWING SHOWS HOW 10 YEAR AFTER-TAX WORTH, AND
RATE OF RETURN VARY AS THE EFFECTIVE TAX RATE FOR ORDINARY
INCOME IS VARIED FROM 30% TO 70%, IN INTERVALS OF 10%.   FOR EACH
VARIATION, THE TAX RATE USED FOR CAPITAL GAINS IS ONE
HALF THE CORRESPONDING RATE FOR TAXING ORDINARY INCOME.

TAX RATE FOR ORD. INCOME	NET WORTH	RATE OF RETURN	CASH ON CASH
30.00	3006946	15.46	-20.20
40.00	2818510	14.72	-20.20
50.00	2630074	13.93	-20.20
60.00	2441638	13.08	-20.20
70.00	2255429	12.19	-20.20

    THE FOLLOWING SHOWS HOW 10 YEAR AFTER-TAX WORTH, AND
RATE OF RETURN VARY FOR FIVE VARIATIONS IN PURCHASE PRICE:

PURCHASE PRICE	NET WORTH	RATE OF RETURN	CASH ON CASH
5165631	2605915	11.46	-16.38
4999000	2555926	13.60	-20.20
4832369	2505936	16.43	-26.35
4665738	2455947	20.49	-37.89
4499107	2405958	27.37	-67.38

Note that this option requires a cash investment of $714,000 and provides a 14.0% return which is better than Option One.

It is also important to note that if for some reason the total investment in Option Two should come to $5,165,631 that this option would still provide a 11.5% return. Note that the net rent per square foot can be reduced to $1.80/S.F. and still provide a better than 11% return.

Option Two is clearly the better of the two alternatives for industrial development of the subject parcel.