

## Solutions to Questions - Chapter 16

### Financing Project Development

#### Question 16-1

*What are the sources of risk associated with project development?*

Sources of risk associated with project development include market risks and project risks. Market risks are the result of unexpected changes in general market conditions affecting the supply and demand for space. Project risks are the result of choosing a specific location to develop a property and the design of the project.

#### Question 16-2

*What are two development strategies that many developers follow?*

Business strategies used by developers can be categorized in three general ways: 1) owning and managing projects for many years, 2) selling projects after the lease-up phase, and 3) developing land and buildings for lease in a master-planned development or “build to suite” for single tenants. Following a particular strategy allows the developer to have a balance between use of external contractors, architects, real estate brokers, leasing agents, and property managers and having this expertise within the firm.

#### Question 16-3

*What contingencies are commonly found in permanent or take-out loan commitments? Why are they used? What happens if they are not met by the developer?*

Contingencies commonly found in permanent or take-out loan commitments include: 1) a maximum amount of time to obtain a construction loan commitment, 2) a date for completion of construction, 3) minimum rent-up (leasing) requirements and an approval of major leases, 4) an expiration date of the permanent loan commitment and any provisions for extensions, and 5) an approval by the permanent lender of design changes and substitution of any building materials.

#### Question 16-4

*What is a standby commitment? When and why is it used?*

A standby commitment is an agreement by a lender to provide permanent financing for a property once construction is complete. It is used by a developer to obtain construction financing, because construction lenders typically require the commitment of a permanent lender before a construction loan will be made. The permanent lender may receive a fee for making the commitment to provide permanent financing, if necessary. A standby commitment is often used by developers who are still shopping for permanent financing, but need a commitment in order to obtain the construction loan. Thus, the standby commitment is like an option that the developer can use as a source of financing, but may choose not to if a better alternative is found.

#### Question 16-5

*A presale agreement is said to be equivalent to a take-out commitment. What will the construction lender be concerned about if the developer plans to use such an agreement in lieu of a take-out?*

A presale agreement differs from a take-out commitment in that proceeds from the sale of a property are used to repay the construction loan rather than the permanent loan. The construction lender must be sure that the agreement requires the buyer to purchase the property at an amount that is at least sufficient to pay off the construction loan and that there will be no contingencies in the agreement that allow the purchaser to cancel the agreement.

#### Question 16-6

*What is the major concern construction lenders express about the income approach to estimating value? Why do they prefer to use the cost approach when possible? In the latter case, if the developer has owned the land for five years prior to development would the cost approach be more effective? Why or why not?*

The income approach usually provides a good indication of the expected value of an income-producing property once construction is complete and it has been leased-up. The projected value should exceed construction costs, if this is not the case, the project is not feasible and the loan should not be made. Assuming that the project is feasible, using the cost approach would provide a more conservative estimate of value, especially if the land has appreciated in value from its original cost to the developer.

**Question 16-7**

*What do we mean by overage in a retail lease agreement? How might it be calculated?*

Retail leases often specify a minimum rent that must be paid by tenants, as well as a percentage rent provision whereby the tenant pays rent based on a percentage of sales revenue once sales revenue exceeds a specified minimum amount. The amount by which the total rent exceeds the minimum rent is referred to as overage rent.

**Question 16-8**

*What are "gross ups" in determining tenant reimbursements for operating expenses? Why are they used?*

Gross ups are used by developers to increase reimbursable operating expenses to be paid by tenants based on reimbursable expenses that would be expected when the property is fully occupied. This way, as actual expenses are incurred by the developer as the property leases up, the developer is receiving funds from tenants "in advance" and will have adequate cash flow today to cover expenses prior to full occupancy.

**Question 16-9**

*What is sensitivity analysis? How might it be used in real estate development?*

Sensitivity analysis is a way of determining how sensitive the expected results of projects are to changes in the underlying assumptions.

This is an excellent way of evaluating the riskiness of a real estate development project.

**Question 16-10**

*It is sometimes said that land represents "residual" value. This statement reflects the fact that improvement costs do not vary materially from one location to another whereas rents vary considerably. Hence, land values reflect changes in rents (both up and down) from location to location. Do you agree or disagree?*

If improvement costs do not vary significantly between different locations, then the difference in rents may be often attributable to differences in the productivity or suitability of the land for that development and hence the land value becomes the residual value. (Author's note: In recent years there has been more of an awareness that once a development is complete, some of the income may reflect a return on the "business" aspects of the development, e.g. a successful hotel that is a part of a national franchise or a nursing home. Thus, the appraiser must be careful not to attribute this business value to the land.)

**Question 16-11**

*What are holdbacks in construction lending? Why is the practice of "holdbacks" used?*

Holdbacks are used by construction lenders to be sure that a developer has met all of his or her obligations before all of the funds from the construction loan are given to the developer.

## Solutions to Problems - Chapter 16

### Financing Project Development

#### Problem 16-1

(a)

	240 Unit Proposal	250 Unit Revised Proposal
Gross Revenue	\$ 2,851,200	\$ 2,970,000
Vacancy	<u>142,000</u>	<u>148,500</u>
Expenses	<u>997,920</u>	<u>1,782,000</u>
Net Operating Income	\$ 1,710,720	\$ 1,782,000
Cost	\$22,000,000	\$22,800,000
Return on Total Cost	7.78%	7.82%

The project becomes slightly more feasible because the land cost per unit declines from  $(\$2,800,000 \div 240) = \$11,667$  to  $(\$2,800,000 \div 250) = \$11,200$ , which partially explains why developers tend to maximize density on sites where feasible. Profitability would be even better if operating expenses (35%) would not increase proportionately with rents.

A regulatory body could be persuaded to increase density if it wanted to provide more housing for its community residents and perhaps increase its property tax revenues. It would be against it if the added density caused an increase in traffic, decreased open/green space and was unfair to other developers seeking approval of projects with lower densities.

(b) Assume a 240 percent luxury project at a cost of \$83,000 per unit.

In order to get an 8% return on cost, we can approximate the rents required to achieve this as follows:

- (1)  $(\$83,000 \times 240 + \$2,800,000) \times 0.08 = \$1,817,600$  (NOI)
- (2) Given that NOI is 60% of rents, we have:

$$\begin{aligned} \text{NOI} &= 0.60 \times \text{Rent} \\ \$1,817,600 &= 0.60 \times \text{Rent} \\ \$3,029,333 &= \text{Rent} \end{aligned}$$

Annual rent would have to be  $\$3,029,333 \div 240 \text{ units} \div 12 = \$1,052$  per unit per month. The developer would have to complete a more refined market analysis to determine what the competition is asking for rents for comparable units and also consider whether the location is suitable for an upgraded level of "luxury units" in that submarket/location.

#### Problem 16-2

Parker Road Plaza

The following conventions were used:

##### Depreciation Schedule:

<u>Category</u>	<u>Depreciation Period</u>	<u>Method</u>
Capital Improvements (90%)	31.5 years	S/L
Tenant Improvements (10%)	7.0 years	DDB

The total amount to be depreciated is the total direct costs financed, \$11,865,000, plus the estimated interest carry. These costs are split between capital improvements (90% of the total) and tenant improvements (10% of the total). The mid-year convention was not used on either the 31.5 year straight-line depreciation for capital improvements or the 7 year double declining balance used for the tenant improvements. However, the use of double declining balance does allow for switching to straight-line after the fourth year (with a double declining balance and a depreciation period of 7 years.)

**Amortization Schedule:**

<u>Category</u>	<u>Depreciation Period</u>	<u>Method</u>
Construction loan fees	1 year-	S/L
Permanent loan fees	10 years	S/L

The construction loan fee and the permanent loan fee are amortized over the lives of each loan, respectively. The construction loan fee of \$253,591 is amortized over the one-year construction time period, while the permanent loan fee of \$316,988 is amortized over the ten-year life of the permanent loan.

If the property is sold before the end of the depreciation/amortization periods, the basis in the property must be adjusted for the amount of accumulated depreciation/amortization already taken.

## PART I (a)

**General Project Description**

A. Site and Proposed Improvements	
Site Area (in acres)	12
Gross Buildable Area (GBA)	190,000 sq. feet
Gross Leasable (GLA)	175,000 sq. feet
Percent Leasable Area	92.11%
Floor Area Ratio (Site Area)	36.35%
B. Development Period	
	12 months
C. Loan Information	
Construction Loan:	
Loan Term	12 months
% of Construction \$ Drawn the 1st 6 months	60.00%
% of Construction \$ Drawn the last 6 months	40.00%
Interest Rate	13.00%
Construction Loan Fee	2.00%
Permanent Loan:	
Debt Amortization	20 years
Term of Loan	10 years
Interest Rate	12.00%
Permanent Loan Fee	2.50%
D. Anticipated Hold After Completion	
	5 years

**Summary of Cost Information for Parker Road Plaza**

<u>A. Land and Site Improvement</u>	<u>Costs</u>	<u>% of Total Costs</u>	<u>Cost/(GBA) ft.</u>
Site Acquisition and Closing Costs	\$2,250,000	14.5%	\$11.84
Site Improvements	\$750,000		
B. Construction Costs			
Total Hard Costs @ \$54.00/(GBA) ft.	\$10,260,000		
Total Soft Costs (exc. interest) @ \$4.50/(GBA) ft.	<u>\$885,000</u>		
Project Costs w/o Interest Carry and Loan Fees	<u>\$14,115,000</u>		
Interest Carry and Loan Fees			
Construction Interest	\$814,537		
Construction Loan Fees	253,591		
Permanent Loan Fees	<u>316,988</u>		
Unfinanced Soft Costs	<u>\$1,385,117</u>	<u>8.9%</u>	<u>\$7.29</u>

TOTAL PROJECT COSTS	<u>\$15,500,117</u>	<u>100.0%</u>	<u>\$81.58</u>
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PART I (b)

**Summary of Construction Loan Terms**

Site Improvements	\$750,000
Total Hard Construction Costs	\$10,260,000
Total Soft Construction Costs	<u>\$855,000</u>
Total Costs Which Will Be Financed	\$11,865,000
Estimated Interest Carry (calculated below)	<u>814,537</u>
Total Loan Amount	<u>\$12,679,537</u>

# Interest Carry for Parker Road Plaza

## Construction Loan Repayment Schedule and Yield Calculation for Construction Lender

	(a)	(b)	(c)	(d)	(e)	(f)	(g)
	Draws Direct		Total Monthly				
Monthly	Costs	Interest	Draws (a) + (b)	Payments_ Principal	Interest (g) x (13%/12)	Total Payments (d) + (e)	Ending Bal. (g) Prev Bal + (c) - (d)
0	\$0	\$0	\$0				\$0
1	1,865,500	0	1,186,500		\$0	\$0	1,186,500
2	1,865,500	12,854	1,199,354		12,854	12,854	2,385,854
3	1,865,500	25,847	1,212,347		25,847	25,847	3,598,200
4	1,865,500	38,981	1,225,481		38,981	38,981	4,823,681
5	1,865,500	52,257	1,238,757		52,257	52,257	6,062,438
6	1,865,500	65,676	1,252,176		65,676	65,676	7,314,614
7	791,000	79,242	870,242		79,242	79,242	8,184,856
8	791,000	88,669	879,669		88,669	88,669	9,064,525
9	791,000	98,199	889,199		98,199	98,199	9,953,724
10	791,000	107,832	898,832		107,832	107,832	10,852,556
11	791,000	117,569	908,569		117,569	117,569	11,761,125
12	791,000	127,412	918,412	\$12,679,537	127,412	12,806,950	0
Total	<u>\$11,865,000</u>	<u>\$814,537</u>	<u>\$12,679,537</u>	<u>\$12,679,537</u>	<u>814,537</u>	<u>\$13,494,075</u>	<u>\$0</u>

Yield to Lender: The yield to the lender is calculated as the interest rate needed to equate the present value of the construction loan fee to the present value of the cash flow stream of the lender which is calculated from the Construction Loan Repayment Schedule as column (d) minus column (a).

Month	Cash Flows
0	253,591
1	(1,186,500)
2	(1,186,500)
3	(1,186,500)
4	(1,186,500)
5	(1,186,500)
6	(1,186,500)
7	(791,000)
8	(791,000)
9	(791,000)
10	(791,000)
11	(791,000)
12	11,888,537

Yield to Construction Lender = 17.58%

## PART I (c)

### Summary of Permanent Loan Terms

Total Loan	\$12,679,537
Debt Amortization	20
Term of Loan	10
Interest Rate	12.00%
Debt Service/Month	\$139,613
Debt Service/Year	\$1,675,352
2.50% Permanent Loan Fee	\$316,988

### Pro Forma Statement of Cash Flows - Construction Period

	<u>Draws Per Year (0)</u>	<u>Draws Per Year (1)</u>	<u>Total</u>
Cost Breakdown	\$2,250,00		
Site Acquisition & Closing Costs		\$750,000	\$2,250,000
Site Improvements		10,260,000	750,000
Hard Costs		855,000	10,260,000
Soft Costs			855,000
Permanent Loan Fee	316,988		316,988
Construction Loan Fee	253,591		253,591
Construction Interest		814,537	814,537
Total	<u>\$2,820,579</u>	<u>\$12,679,537</u>	<u>\$15,500,117</u>
Total Construction Cash Outflow	\$2,820,579	12,679,537	\$15,500,117
Less: Total Draws	<u>0</u>	<u>12,679,537</u>	<u>12,679,537</u>
Total Equity Needed	<u>\$2,820,579</u>	<u>\$0</u>	<u>\$2,820,579</u>

### PART II (d)

### Pro Forma Operating Statement - Parker Road Plaza

CASHFLOWS (EOP)		<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
INCOME: Rent Increase @	5.00%					
Minimum Rent	\$18.50	\$3,237,500	\$3,339,375	\$3,569,344	\$3,747,811	\$3,935,201
Average (% of gross sales)	3.00%	52,500	118,650	118,769	263,095	341,881
Tenant Reimbursement (per GLA)	\$8.00	<u>1,400,000</u>	<u>1,470,000</u>	<u>1,543,500</u>	<u>1,620,675</u>	<u>,701,709</u>
GROSS POTENTIAL INCOME		\$4,690,000	\$4,998,025	\$5,301,613	\$5,631,581	\$5,978,791
Vacancy Allowance		<u>1,407,000</u>	<u>249,401</u>	<u>265,081</u>	<u>281,579</u>	<u>98,940</u>
EXPECTED GROSS INCOME		\$3,283,000	\$4,738,624	\$5,036,532	\$5,350,002	\$5,679,852
EXPENSES						
Operating Expenses (per GLA)	\$14.00	\$2,450,000	2,572,500	2,701,125	2,836,181	,997,990
Management Fee (% of EGI)	5.00%	<u>164,150</u>	<u>236,931</u>	<u>251,827</u>	<u>267,500</u>	<u>83,993</u>
Total Expenses		<u>\$2,614,150</u>	<u>\$2,809,431</u>	<u>\$2,952,952</u>	<u>\$3,103,681</u>	<u>\$3,261,983</u>
NET OPERATING INCOME		\$668,850	1,929,193	2,083,581	2,246,321	,417,869
Less: Debt Service		<u>1,675,352</u>	<u>1,675,352</u>	<u>1,675,352</u>	<u>1,675,352</u>	<u>,675,352</u>
BEFORE TAX CASH FLOW		<u>\$(1,006,502)</u>	<u>\$253,841</u>	<u>\$408,229</u>	<u>\$570,969</u>	<u>\$742,517</u>

### Depreciation and Amortization Schedule - Parker Road Plaza

A. Depreciable Costs			
Site Improvements (on/off)		\$750,000	
Hard Costs		\$10,260,000	
Soft Costs & Construction Interest		<u>\$1,669,537</u>	
Total Depreciable Costs		<u>\$12,679,537</u>	
B. Depreciation Schedule			<u>Depreciation Period</u>
Capital Improvements (90% of Total)		11,411,584	31.5 yrs.
Tenant Improvement (10% of Total)		<u>1,267,954</u>	7 yrs.
C. Amortization Schedule			<u>Amortization Period</u>
Construction Loan Fees	253,591		1 yr.
Permanent Loan Fees	<u>316,988</u>		10 yrs.
Total Amortized Costs		570,579	
Add: Land		<u>2,250,000</u>	
Total Project Costs		<u>\$15,500,177</u>	

Adjusted Basis at the End of Year 6

<u>Item</u>	<u>Total Cost</u>	<u>Less: Accum Deprec/Amort.</u>	<u>Adjusted Basis</u>
Land	\$2,250,000	\$0	\$2,250,000
Capital Improvements	11,411,584	1,811,362	9,600,221
Tenant Improvements	1,267,954	1,047,915	220,039
Permanent Loan Fees	316,988	158,494	158,494
Construction Loan Fees	<u>253,591</u>	<u>253,591</u>	<u>0</u>
Total	<u>\$15,500,117</u>	<u>\$3,271,362</u>	<u>\$12,228,755</u>

**Sale of Parker Road Plaza**

Sale Price	\$18,400,000
Less:	
Selling Expenses	368,000
Mortgage Balance	<u>11,632,757</u>
BTCF (sale)	\$6,399,243
Gain In Year of Sale:	
Sale Price	\$18,400,000
Less:	
Selling Expenses	368,000
Adjusted Basis	<u>12,228,755</u>
Total Gain	\$5,803,245
Tax @28%	1,624,909
BTCF(sale)	\$6,399,243
- Tax	<u>1,624,909</u>
ATCF(sale)	<u>\$4,774,335</u>

PART II (d) and (e)

**Profitability Analysis - Parker Road Plaza**

Before Tax Cash Flows:

<u>Year</u>	<u>0</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
Equity	(\$2,820,579)	(\$0)					
BTCF Operation			(\$1,006,502)	\$253,841	\$408,229	\$570,969	\$742,517
BTCF Sale							<u>\$6,399,243</u>
Total BTCF	<u>(\$2,820,579)</u>	<u>(\$0)</u>	<u>(\$1,006,502)</u>	<u>\$253,841</u>	<u>\$408,229</u>	<u>\$570,969</u>	<u>\$7,141,761</u>

BTIRR	=	16.14%
BTNPV @ 16%	=	\$22,639

Taxable Income:

NOI			\$668,850	\$1,929,193	\$2,083,581	\$2,246,321	\$2,417,869
Less:							
Interest			1,512,797	1,492,181	1,468,950	1,442,773	1,413,276
Depreciation							
Capital Improvements			362,272	362,272	362,272	362,272	362,272
Tenant Improvements			362,272	258,766	184,883	132,024	110,020
Amortization							
Construction loan fees		253,591					
Permanent Loan Fee			<u>31,699</u>	<u>31,699</u>	<u>31,699</u>	<u>31,699</u>	<u>31,699</u>
Taxable Income	0	<u>(253,591)</u>	<u>(1,600,191)</u>	<u>(215,726)</u>	<u>35,826</u>	<u>277,553</u>	<u>500,601</u>
Tax @28%;	0	<u>(71,005)</u>	<u>(448,053)</u>	<u>(60,403)</u>	<u>10,031</u>	<u>77,715</u>	<u>140,168</u>



After Tax Cash Flows:

Total BTCF	(\$2,820,579)	(\$0)	(\$1,006,502)	\$253,841	\$408,229	\$570,969	\$7,141,761
Less: Taxes*	0	(71,005)	(448,053)	(60,403)	10,031	77,715	1,765,077
ATCF	<u>(\$2,820,579)</u>	<u>\$71,005</u>	<u>(\$558,448)</u>	<u>\$314,244</u>	<u>\$398,198</u>	<u>\$493,254</u>	<u>\$5,376,683</u>

\*included taxes from sale in year 6

$$\text{ATIRR} = 13.77\%$$

PART II (e)

Based on the BTNPV and BTIRR, this project exceeds the required before tax hurdle rate of 16%. Therefore, Kudhner should move forward and develop Parker Road Plaza.

**Problem 16-3**

Timbercreek Office Building

(a)

**General Project Description**

A. Site and Proposed Improvements

Site Area (in Acres)	1.3
Gross Buildable Area (GBA)	31,200 sq. ft.
Gross Leasable Area (GLA)	26,520 sq. ft.
Percent Leasable Area	85.00%
Floor Area Ratio (Site Area)	55.10%

B. Development Period 12 months

C. Loan Information

Construction Loan:

Loan Term	12 months
% of Construction \$ Drawn the 1st 6 Months	100.00%
% of Construction \$ Drawn the Last 6 Months	0.00%
Interest Rate	13.00%
Construction Loan Fee	1.50%

Permanent Loan:

Debt Amortization	25 years
Term of Loan	8 years
Interest Rate	11.50%
Permanent Loan Fee	4.00%

E. Anticipated Hold After Completion 5 years

**Summary of Cost Information for Proposed Office Building**

<u>Land and Site Improvements</u>	<u>Costs</u>	<u>Percent of Total</u>	<u>Cost per Sq. Ft.</u>
Site Acquisition and Closing Costs	TBD	0.0%	\$0.00
Site Improvements	<u>\$2,400,000</u>		
Project Costs w/o Interest Carry and Loan Fees	<u>\$2,400,000</u>		
Interest Carry and Loan Fees			
Construction Interest	\$230,637		
Construction Loan Fees	39,460		
Permanent Loan Fees	<u>105,225</u>		
Unfinanced Soft Costs	<u>\$375,322</u>	<u>13.5%</u>	<u>\$12.03</u>
TOTAL DEVELOPMENT COSTS	<u>\$2,775,322</u>	<u>100.0%</u>	<u>\$88.95</u>

**Estimation of Loan Costs and Equity Requirements for the Development**

Site Improvements	<u>\$2,400,000</u>
Total Direct Costs Which Will Be Financed	<u>\$2,400,000</u>
Estimated Interest Carry (calculated below)	<u>230,637</u>
Total Loan Amount	<u>\$2,630,637</u>
Total Development Costs	<u>\$2,775,322</u>
Less: Total Loan Amount	<u>2,630,637</u>
Total Equity Requirements for Development	<u>\$144,685</u>

**Estimated Interest Carry for Proposed Office Building  
Construction Loan Repayment Schedule**

	(a)	(b)	(c)	(d)	(e)	(f)	(g)
	Draws Direct	Interest	Total Monthly	Payments	Interest (g) x	Total Payments	Ending Bal. (g)
Monthly	Costs		Draws (a) + (b)	Principal	(13%/12)	(d) + (e)	Prev Bal + (c) - (d)
0	\$0	\$0	\$0				\$0
1	400,000	0	400,000		\$0	\$0	400,000
2	400,000	4,333	404,333		4,333	4,333	804,333
3	400,000	8,714	408,714		8,714	8,714	1,213,047
4	400,000	13,141	413,141		13,141	13,141	1,626,188
5	400,000	17,617	417,617		17,617	17,617	2,043,805
6	400,000	22,141	422,141		22,141	22,141	2,465,947
7	0	26,714	26,714		26,714	26,714	2,492,661
8	0	27,004	27,004		27,004	27,004	2,519,665
9	0	27,296	27,296		27,296	27,296	2,546,961
10	0	27,592	27,592		27,592	27,592	2,574,553
11	0	27,891	27,891		27,891	27,891	2,602,444
12	0	<u>28,193</u>	<u>28,193</u>	<u>\$2,630,637</u>	<u>28,193</u>	<u>2,658,831</u>	<u>0</u>
Total	<u>\$2,400,000</u>	<u>\$230,637</u>	<u>\$2,630,637</u>	<u>\$2,630,637</u>	<u>\$230,637</u>	<u>\$2,861,275</u>	<u>\$0</u>

(b)

**Summary of Permanent Loan Terms**

Total Loan	\$2,630,637
Debt Amortization	25 years
Term of Loan	8 years
Interest Rate	11.50%
Debt Service/Month	\$26,740
Debt Service/Year	\$320,875
4.00% Permanent Loan Fee	\$105,225

**Pro Forma Statement of Cash Flows - Construction Period**

	<u>Draws per Year (0)</u>	<u>Draws per Year (1)</u>	<u>Total</u>
Cost Breakdown			
Site Acquisition & Closing Costs	TBD		\$0
Site Improvements		\$2,400,000	2,400,000
Permanent Loan Fee	\$105,225		105,225
Construction Loan Fee	39,460		39,460
Construction Interest		<u>230,637</u>	<u>230,637</u>
Total	<u>\$114,685</u>	<u>\$2,630,637</u>	<u>\$2,775,322</u>
Total Construction Cash Outflow	\$114,685	\$2,630,637	\$2,775,322
Less: Total Draws	<u>0</u>	<u>2,630,637</u>	<u>2,630,637</u>
Total Equity Needed	<u>\$114,685</u>	<u>\$0</u>	<u>\$114,685</u>

### Pro Forma Operating Statement - Parker Road Plaza

CASHFLOWS (EOP)		<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
INCOME: Rent Increase @	3.00% yr.					
Minimum Rent	\$19.00 / GLA ft.	\$503,880	\$518,996	\$534,556	\$550,603	\$567,121
Tenant Reimbursement (per GLA)	\$3.25	<u>86,190</u>	<u>88,776</u>	<u>91,439</u>	<u>94,182</u>	<u>97,008</u>
GROSS POTENTIAL INCOME		\$590,070	\$607,772	\$626,005	\$644,784	\$664,129
Vacancy Allowance		<u>147,518</u>	<u>30,389</u>	<u>31,300</u>	<u>32,239</u>	<u>33,206</u>
EXPECTED GROSS INCOME		\$442,553	\$577,383	\$594,705	\$612,546	\$630,923
EXPENSES						
Operating Expenses (per GLA)	\$9.50 / GLA ft.	251,940	259,498	267,283	275,302	283,561
Total Expenses		<u>\$251,940</u>	<u>259,498</u>	<u>267,283</u>	<u>275,302</u>	<u>283,561</u>
NET OPERATING INCOME		\$190,613	\$317,885	\$327,422	\$337,245	\$347,362
Less: Debt Service		<u>320,875</u>	<u>320,875</u>	<u>320,875</u>	<u>320,875</u>	<u>320,875</u>
BEFORE TAX CASH FLOW		<u>(\$130,263)</u>	<u>(\$2,990)</u>	<u>\$6,547</u>	<u>\$16,369</u>	<u>\$26,486</u>

### Sale of Proposed Office Building

Sale Price	\$3,656,400*
Less:	
Selling Expenses	146,258
Mortgage Balance	<u>2,507,396</u>
BTCF (sale)	<u>\$1,002,787</u>

### Profitability Analysis for Proposed Office Building

Year	<u>0</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
Equity	(\$144,685)	(\$0)					
BTCF Operation			\$130,263	\$2,990	\$6,547	\$16,369	\$26,486
BTCF Sale							<u>\$1,002,787</u>
Total BTCF	<u>(\$144,685)</u>	<u>(\$0)</u>	<u>(\$130,263)</u>	<u>(\$2,990)</u>	<u>\$6,547</u>	<u>\$16,369</u>	<u>\$1,029,273</u>
BTIRR		=		29.64%			
BTNPV @ 16%		=		\$190,459			

(c)

Without considering the equity requirements for the land, a positive BTNPV exists when you discount the equity cash flows at 16%.

(d)

Unfortunately, if the asking price of the land was \$195,000, the BTIRR would fall to 15.78%. Additionally, the BTNPV of 16% would become negative and the project would no longer meet Spain Development Company's hurdle rate of 16%.

### Before Tax Cash Flows

Year	<u>0</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
Equity	(\$144,685)	(\$0)					
Proposed Land Price	(195,000)						
BTCF Operation			(\$130,263)	(\$2,990)	\$6,547	\$16,369	\$26,486
BTCF Sale							<u>\$1,002,787</u>
Total BTCF	<u>(\$339,685)</u>	<u>(\$0)</u>	<u>(\$130,263)</u>	<u>(\$2,990)</u>	<u>\$6,547</u>	<u>\$16,369</u>	<u>\$1,029,273</u>
BTIRR		=		15.78%			
BTNPV @ 16%		=		(\$4,541)			

**Problem 16-4**

- (a) The yield to the lender is now 15.11% vs. 15.45% and the after-tax IRR to the investor is 17.73% vs. 17.35%.
- (b) The yield to the lender is now 15.89% vs. 15.45% and the after-tax IRR to the investor is 17.00% vs. 17.35%.