Angus Cartwright III

People

Angus Cartwright, III, an investment advisor, was based in Arlington, Virginia, the home of many members of the DeRight family. In September 2003 his attention focused on the needs of two cousins at different stages of their lives. John DeRight had recently sold his business to a medium-sized public company in exchange for $18 million of the company's stock. He then retired and expected to live comfortably on the $500,000 in dividends paid on the stock plus retirement and other income he had of an equal amount. He felt the need to diversify his investments, however, and planned to sell up to half of his stock and reinvest it in real estate and other investments. Even though the basis in the stock was negligible, he felt that now would be a good time to take advantage of the new tax law and pay his capital gains at the newly enacted 15% rate.

Judy DeRight was president and sole stockholder of a small-sized chemical company that had earned in excess of $1.6 million before taxes and $1.1 million after taxes in each of the previous ten years. She had received many offers to sell her company in exchange for the stock of a public company; but she enjoyed the independence of running her own business. She had determined that her chemical business could best grow through internal expansion rather than by acquisition. On the other hand, she did feel it was wise for her to diversify her own investments. Over time, she personally had accumulated over $16 million now invested in short-term securities, which she considered unnecessary for her present operations and thus available for outside investment.

Both felt that real estate would give them the benefits of diversification, protection from inflation, and some tax advantages. Each DeRight wanted to purchase a property large enough to attract the interest of a professional real estate management company to relieve them of the burden of daily management, and they wanted a minimum leveraged return on their investments of 12% after tax.

Properties

Angus Cartwright, III, like his father, had dealt with the DeRight family for many years and had located four properties that he felt might be suitable investments for his two clients. He had brokers show the properties to Judy and John DeRight and both of the DeRights were enthusiastic about them. One property was Alison Green, a 100-unit garden apartment project located in Montgomery County, Maryland. This property had been completed in 2000 and had been operating at a 95%

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occupancy level since the initial rentup. There was a building moratorium in parts of the county because of inadequate public facilities, preventing much short-term competition. The asking price for Alison Green was $10 million, but the broker had received indications that a price of $9.6 million would probably be acceptable. The gross rental income before vacancy from the property was projected at $1,440,000 with cash flow before financing of $870,200. Real estate taxes in Montgomery County were generally about 12% of the gross rent roll. A new $6,000,000 mortgage at a 6% interest rate had recently been arranged. The term of the mortgage was 10 years, but the amortization period was 30 years. The land value of the property, for purposes of depreciation, was estimated at $2,100,000 and the depreciation period (cost recovery period) for the building would be 27.5 years.

Nearby was the second property, a five-story, 75,000 square foot office building, 900 Stony Walk, with 67,000 square feet of rentable space. The building was rented to lawyers, accountants, and small service firms which each rented between 5,000 and 7,500 square feet. 900 Stony Walk was completed in 1998 and had been operating at a 95% occupancy level since its initial rentup. The asking price was $11.6 million, but the broker believed a price of $11.5 million would be accepted. The projected gross rental income for 900 Stony Walk was $1,742,000 with cash flow before financing of $1,057,200. A new $8 million mortgage at a 6.5% interest rate had been arranged. The term was 10 years with amortization over 20 years. The land value for purposes of depreciation was estimated at $3,500,000. Since it was a nonresidential building, 900 Stony Walk would have to be depreciated on a straight-line basis over 39 years. Like Alison Green, real estate taxes would be at a rate of 12% of gross rent.

The third property was Ivy Terrace, an 80-unit garden apartment project under construction near Arlington, Virginia. The property was for sale for $8.6 million, but the broker was certain it could be purchased for $8.4 million. A 10-year, $5.5 million mortgage at a 6% interest rate with a 30-year amortization period had been arranged. The land was leased for 99 years with annual payments of $30,000. The buyer would take title upon completion of the construction. For depreciation purposes, the owner would be able to depreciate the full $8.4 million purchase price using a straight-line method over 27.5 years. The gross rentals for the property were estimated at $1,296,000. The projected cash flow from operations after a vacancy allowance of 7% and also reserves, but before financing and leasehold payments, would be $765,700. Cartwright knew that property taxes in Arlington were about 10% of the gross rents. Since they lived nearby, Cartwright and the DeRights had checked the area closely and concluded that the rental and expense projections were reasonable.

Also under construction in Arlington was The Fowler Building, a two-story, 60,000 square foot office building with 50,000 square feet of rentable space. Leasing for the building had already begun with 60% of the space rented, mostly to small computer and consulting companies. It appeared that in order to get the building rented up quickly, the developer had written leases at below market rents. The Fowler Building was for sale for $9,600,000 million, but the broker was sure it could be purchased for $9,400,000 million. A 10-year, $7.0 million mortgage had been arranged at a 7.5% interest rate, amortized over 25 years. The land was leased for 99 years with annual leasehold payments of $70,000. As with 900 Stony Walk, the buyer of The Fowler Building would depreciate it using straight-line depreciation over 39 years. The gross rentals for The Fowler Building were estimated at $1,275,000, and the cash flow before financing and leasehold payments was projected at $788,300 once the building reached 93% occupancy. These figures also seemed reasonable, but because a number of new properties were coming on the market in the Arlington area, Cartwright was able to negotiate a guaranteed return based on his pro formas on both Ivy Terrace and The Fowler Building during the first three years until rentals reached the projected 93% occupancy levels.

Although Cartwright expected income from these properties to keep up with inflation, he made what he thought was a conservative assumption that the cash flow from operations would only increase at a rate of 3% per year except for the Fowler Building which he projected to grow at 4% per year. After talking with the DeRights, Cartwright also felt that it was logical to assume, for calculation purposes, that they would hold their investments for a 10-year period. He therefore assumed a sale at the end of year 10 and projected a sales price for all four properties based on projected cash flows and trends in the suburban Washington, D.C., apartment and office markets. For Alison Green he projected a sales price, net to the seller (after paying brokerage fees and other transaction costs) at the end of year 10, of $12,500,000. For 900 Stony Walk he projected a sales price of $14,500,000. He estimated that Ivy Terrace would sell for $10,500,000, and The Fowler Building would sell for $13,300,000. He predicted the highest appreciation rate on that building since he felt that the present leases had been written at below market rent to facilitate leaseup.

In addition to the basic operating expenses, Cartwright felt it was important to include a capital reserve, a line item that was rarely included by sellers. For the apartments, he assumed that he would set aside in cash $250 per apartment per year. This reserve would build up so that sufficient funds were available when it came time to replace the roof, repave the parking lot, replace carpeting and appliances every five to seven years, and periodically refurnish the clubhouse. If he actually decided to purchase one of the apartment properties, he would hire a construction consultant to do a more detailed capital needs study, but for now, the $250 reserve would be adequate[1].

For the office buildings, Cartwright found that he needed to set aside a reserve for capital expenditures. To be accurate, one needed to look at each lease and make an assumption about which tenants would leave and require him to do an extensive renovation for a new tenant as well as pay a brokerage commission. For this first cut, he decided to make the assumption that he would set aside $.30 per rentable square foot per year for Stony Walk and Fowler for such items as a roof replacement. Again, this was an assumption that would need to be carefully tested.

Finally, Cartwright needed to consider the tax implications of these reserves. As non-cash expenses, they were not deductible for income tax purposes. In later years, when the reserves were spent, they generally were added to the basis of the property and depreciated over the life of the property (27.5 years for residential and 39 years for commercial). In this case, for simplicity, he assumed that the entire reserves would be spent at the end of year 10 to prepare the property for sale. Keeping careful records of these expenses and consulting an accountant were important since certain of these expenses, such as lease commissions, could be deducted over the length of the lease. Still others could be deducted faster if the tenant moved out and the improvements had to be ripped out. For the purpose of this analysis, however, Cartwright felt the simplest solution was the conservative one of not taking into account depreciation and amortization of these reserves during the operating period. At the time of sale of the property, he would assume that these reserves would be spent which would increase his book value by the total amount of the reserve.

Preliminary Analysis

Time was valuable to Cartwright but he had always found a preliminary analysis worthwhile. It enabled him to identify quickly those properties where detailed financial analysis and a more careful physical inspection and examination of day-to-day operations were warranted. He knew from

[1] Normally, the reserve would be inflated on an annual basis to reflect increases in building costs. To simplify the calculation in exhibit 5, please assume that the apartment and office reserves remain flat throughout the 10-year period. Similarly you should assume that the leasehold payment remains flat for 10 years. In reality, the owner of the land would probably include an inflationary increase every three or five years.

experience that he would then have to spend considerable time studying comparable projects if he were to validate the reasonableness of the purchase prices, operating expenses, rent levels, and the amenities provided in the properties he felt were worth purchasing.

Cartwright first noted the assumptions underlying his analysis. He assumed that:

1. There would be 3% annual increases in cash flow from operations for Alison, Ivy, and Stony Walk and 4% for Fowler until the time of sale.

2. The vacancy rate for Alison Green and Stony Walk would be 5% throughout the holding period. For Ivy Terrace and the Fowler Building, he would negotiate a rental guarantee with the developers so that the property generated cash flow from operations as if they were 93% occupied. Once the property reached this occupancy level, the developers would be released from their guarantees and Cartwright assumed that these two properties would then operate with a vacancy rate of 7% throughout the holding period.

3. His clients would supply the necessary equity investment;

4. In spite of uncertainties as to future changes in income tax laws, for purposes of this initial calculation, he would assume an ordinary tax rate of 35% and a capital gain tax rate of 15%. He would also assume, based on current tax law, a tax rate of 25% on that part of the gain on sale that related to depreciation. (State income taxes would not be taken into account at this time although in some states the effective combined rate might be 40%);

5. His clients could fully use any tax losses as they occurred against other income[2], and tax laws would not change again during the holding period.

Then, being methodical, he developed a list of the salient facts he would need in his analysis (see **Exhibit 1**).

[2] For investors not primarily in the real estate business, the federal regulations permit the deduction of losses from real estate which is considered a passive investment, only from other investments generating passive income. Although the DeRights in this case do not have other passive income, for the purpose of learning the mechanics, it is assumed that they can utilize any losses. In practice, investors now attempt to balance their real estate portfolio to take advantage of any losses.

Exhibit 1[a]

		Alison Green	900 Stony Walk	Ivy Terrace	The Fowler Building
Number of units/or square feet of rentable space		100	67,000		
A)	Gross Purchase Price	$9,600,000			
B)	Depreciable Base	$7,500,000			
C)	Depreciable Life (Capital Recovery Period)	27.5			
D)	Estimated Sales Price	$12,500,000			
E)	Expected Year of Sale	10			
F)	Cash Flow from Operations	$ 870,200			
G)	Annual Increase in CFO	3%			
H)	Leasehold Payments	$ 0			
I)	Equity Investment	$3,600,000			
J)	Amount of 1st Mortgage	$6,000,000			
	1) Interest Rate	6%			
	2) Term	10 years			
	3) Amortization Period	30 years			
	4) Constant Loan Payments	7.26%	9.08%	7.26%	8.97%

[a]For simplicity of calculation on a calculator, this model assumes annual payments of rent, expenses, and debt service. In reality, monthly payments are the norm. Monthly payments would reduce the constant slightly, since the principal would be repaid more rapidly.

Cartwright's next step was to develop the property setups for each property. Once again he returned to the original brochures given to him by the brokers for each property. In general, the data was not in the form he found most useful. The setup Angus Cartwright developed for Alison Green is shown in **Exhibit 2**.

Exhibit 2 First-Year Project Setups (000s)

	Alison Green	900 Stony Walk	Ivy Terrace	The Fowler Building
Gross Rents	$1,440.0			
- Vacancies	(72.0)			
Effective Gross Income	$1368.0			
- Real Estate Taxes	(172.8)			
- Other Operating Expenses	(300.0)			
- Capital Reserves	(25.0)			
Cash Flow From Operations	870.2			
- Finance Payments	(435.9)			
- Lease Payments	0			
BEFORE TAX CASH FLOW	$434.3			

Cartwright then calculated the major comparable statistics for each property (**Exhibit 3**).

Exhibit 3 Purchase and Operating Comparables

	Alison Green	900 Stony Walk	Ivy Terrace	The Fowler Building
Price/Unit or Price/ Rentable Square Foot	$96,000	$ 171.64		
Real Estate Taxes/Gross Revenue	12%			
Other Operating Expenses/ Unit or Operating Expenses/ Rentable Square Foot	$ 3,000	$ 5.50		
Other Operating Expenses/Gross Revenue	20.8%			
RE Taxes and Operating Expenses/ unit or/ Rentable SF	$4,728			
Average Monthly Rents for the Apartments or Yearly Dollars per Rentable Sq. Ft. of Office Space	$1200	$ 26.00		
Actual or Projected Occupancy	95%			

To validate the reasonableness of the asking price, Cartwright would have to compare the capitalization rates and per-unit costs of recent sales elsewhere in Arlington and Montgomery County. He would also attempt to establish the replacement costs of each project. Unit cost and operating expenses were usually related items.

Operating expenses for similar properties in the same general areas should be close to average, Cartwright believed. Good management could move them down a little, but very deviant expenses were typically signals of trouble and deserved detailed inquiries. Rents were affected by competition, both present and near-term future. What would have to be done to raise rents? What could be done to cut expenses? Basically, how could he increase the cash flow from operations while maintaining or enhancing future value? What would the owners' operating policies be? He felt the DeRights would want to keep their properties well maintained rather than run them down, but this was a decision each would have to make.

Then there were property taxes to consider. Real estate taxes were an important expense of property ownership. Cartwright believed it was worth examining current property taxes and local tax practices, because, over time, tax increases could materially affect cash flow from operations. Systems for determining property taxes varied widely throughout the country.

Risk Analysis

Cartwright had noted that the use of financial leverage in each situation differed (see **Exhibit 1**). For example, the acquisition of Alison Green would be financed with a lower percentage of debt than the acquisition of Ivy Terrace. This leverage was expressed as a loan to value ratio, which in the case of Alison Green was 62.50% (see **Exhibit 4**). Cartwright felt the loan to value ratio on the Fowler Building might be affected by the fact that the property was still under construction.

His next step was to assess the nature of the operating risks attached to each property. Cartwright realized his later financial analysis would rest on the assumption that his clients could maintain the occupancy levels now prevailing. The ratio that is currently used by lenders to describe the operating risk is called the debt coverage ratio. This ratio expresses the relationship between cash flow from operations and financial payments. In the case of Alison Green, the debt coverage ratio is almost 2.00, which is above the 1.25 ratio many lenders currently use for properties of this type.

Using the setups he developed in **Exhibit 2,** Cartwright also thought he should assess the risk of an increase in vacancy through a rough first-year break-even analysis (after financing) for each property. It was apparent to him, for example, that every 1% increase in occupancy added $14,400 to the BTCF of Alison Green. This meant that a 30.16% decrease in occupancy in addition to the 5% already allocated for vacancy would wipe out the before-tax cash flow (BTCF) of the property (see **Exhibit 4**). Therefore, the break-even occupancy is 64.84%.

Exhibit 4 Break-Even Analysis

	Alison Green	900 Stony Walk	Ivy Terrace	The Fowler Building
Current or Projected Occupancy	95.00%			
Added Margin	30.16%			
Break-even Occupancy	64.84%			
Loan to Value	62.50%			
Debt Coverage Ratio	2.00			

Cartwright could envisage problems, which might necessitate additional cash investments, especially in the Fowler property. The break-even analysis suggested that risk might be related to reward in the set of properties he was examining.

Financial Analysis

Since each of his clients was anxious to invest in real estate and because he felt that the four properties were potentially attractive investments, Cartwright decided to expand his analysis. Two simple measures of return are widely used in the real estate industry using the first year stabilized cash flow from operations. The first is the free and clear capitalization rate of return on total assets or total project market value or cost. The capitalization rate is determined by dividing the cash flow from operations by the purchase price. Cartwright calculated that Alison Green had a capitalization rate of 9.06%. In practice, the capitalization rate on the free and clear income actually used by a potential buyer would be adjusted for his or her perception of the capital expenditures required. In a way, this is similar to the approach investors take in assigning a price/earnings ratio to a stock's net income, before capital expenditures.

The second measure of return is called the cash-on-cash return which is derived by dividing the cash flow from operations (after reserves) and after financing, but before income taxes by the equity investment. Some sellers and investors do not deduct the capital reserve for this ratio. In this case, an average reserve is used which gives more validity to the calculation than if nothing were included. Alison Green's cash-on-cash return was 12.06%. Cartwright felt, however, that these simple measures of return did not take into account any income tax payable or considerations for changes in future value. Additional steps were necessary.

Cartwright had been given a method for analyzing income producing real estate that he considered appropriate for the type of comparative analysis he wanted to make in this case (see the **Appendix**). For the purpose of the calculations, he decided (as already noted) even though there were uncertainties as to future income tax laws, to assume a 35% tax rate for ordinary income, a 15% capital gains tax rate on appreciation and a 25% tax rate on gains due to depreciation.

Because he had already assembled the critical facts about Alison Green in **Exhibit 1**, it was easy for him to determine the Before Tax Cash Flow, the Tax Payable, and the After Tax Cash Flow associated with the project over his projected 10-year ownership period. The steps are outlined in the **Appendix**. Having determined the potential cash flow after taxes, including the computation of net cash from sale (see **Exhibit 5**), Cartwright calculated the Internal Rate of Return and the Net Present Value of the Project (NPV) at 12%. He felt this last figure could be useful in setting a maximum purchase price for any subsequent negotiations. His calculations are summarized in **Exhibit 6**.

Exhibit 5 Alison Green Projected Cash Flow ($000s)

ALISON GREEN ($000)

Projected Cash Flow	Assumptions	0	1	2	3	4	5	6	7	8	9	10
Cash Flow from Operations	3% growth		$870.20	$896.31	$923.20	$950.89	$979.42	$1,008.80	$1,039.06	$1,070.24	$1,102.34	$1,135.41
– Lease Payments			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
– Financing			(435.89)	(435.89)	(435.89)	(435.89)	(435.89)	(435.89)	(435.89)	(435.89)	(435.89)	(435.89)
BEFORE TAX CASH FLOW			434.31	460.41	487.30	515.00	543.52	572.91	603.17	634.34	666.45	699.52
+ Amortization	$6,000 mortgage		75.89	80.45	85.27	90.39	95.81	101.56	107.66	114.12	120.96	128.22
+ Reserve			25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
– Depreciation	27.5 years		(272.73)	(272.73)	(272.73)	(272.73)	(272.73)	(272.73)	(272.73)	(272.73)	(272.73)	(272.73)
Taxable Income			262.47	293.13	324.85	357.66	391.61	426.74	463.10	500.73	539.69	580.01
– Tax Payable @35%	35.0% tax rate		(91.87)	(102.60)	(113.70)	(125.18)	(137.06)	(149.36)	(162.08)	(175.26)	(188.89)	(203.00)
AFTER TAX CASH FLOW			342.44	357.82	373.60	389.82	406.46	423.55	441.09	459.09	477.56	496.52
– Equity in		(3,600.00)										
+ Net Cash from Sale												6,421.02
TOTAL RETURN		($3,600.00)	$342.44	$357.82	$373.60	$389.82	$406.46	$423.55	$441.09	$459.09	$477.56	$6,917.53

Purchase Price	$9,600.00	SALES PRICE	$12,500.00	SALES PRICE		$12,500.00
+ Capital Exp.	$250.00	NET BOOK VALUE	($7,122.73)	– Income Tax		($1,079.32)
– Depreciation	($2,727.27)	GAIN ON SALE	$5,377.27	– Mortgage Balance		($4,999.66)
Net Book Value	$7,122.73			Net Cash From Sale		$6,421.02
		Depreciation taken	$2,727.27			
Land Value	$2,100.00	Taxes at 25%	$681.82			
Depreciable Base	$7,500.00	Remaining Gain	$2,650.00			
		Taxes at 15%	$397.50	NET PRESENT VALUE AT 12%		$734.29
		Total Taxes	$1,079.32	INTERNAL RATE OF RETURN		14.93%

Amortization Schedule		0	1	2	3	4	5	6	7	8	9	10
Ending Balance		$6,000.00	$5,924.11	$5,843.66	$5,758.39	$5,668.00	$5,572.18	$5,470.62	$5,362.96	$5,248.85	$5,127.88	$4,999.66
Finance Charge			$435.89	$435.89	$435.89	$435.89	$435.89	$435.89	$435.89	$435.89	$435.89	$435.89
Interest Charge	6.0% interest rate		$360.00	$355.45	$350.62	$345.50	$340.08	$334.33	$328.24	$321.78	$314.93	$307.67
Amortization	30 amortization		$75.89	$80.45	$85.27	$90.39	$95.81	$101.56	$107.66	$114.12	$120.96	$128.22

Exhibit 6 Financial Analysis

	Alison Green	900 Stony Walk	Ivy Terrace	The Fowler Building
Equity Required	$3,600,000			
Simple Return Measures				
Capitalization Rate—Purchase	9.06%			
Capitalization Rate—Sale	9.08%			
Cash-on-Cash Return (year 1)	12.06%			
Increase in Capital Value[a]	30.21%			
Discounted Return Measures				
Internal Rate of Return	14.93%			
Net Present value @ 12%	$734.29			
Profitability Index $\left(\frac{\text{Net Present Value}}{\text{Initial Equity}}\right)$	20.4%			

[a]Increase in capital value is calculated by dividing the (sale price minus the purchase price) by the purchase price.

It was obvious that Alison Green more than met the DeRights' minimum return requirements of 12% but Cartwright was intrigued. He wondered how the other projects would measure up to Alison Green in **Exhibit 6**. Cartwright wanted to determine the rank of each project on each measure in **Exhibit 7**.

Exhibit 7 Investment Ranking[a]

	Alison Green	900 Stony Walk	Ivy Terrace	The Fowler Building
Simple Return Measures				
Capitalization Rate—Purchase				
Capitalization Rate—Sale				
Cash-on-Cash Return				
Discounted Return Measures				
Internal Rate of Return				
Net Present value				
Profitability Index				

[a]All investment rankings reflect the perspective of the DeRights as prospective purchasers in year 1 and sellers in year 10 with 1 being the most favorable and 4 being the least. A higher capitalization rate projection in purchasing the property is more favorable. In case of sale the reverse is true.

Next, Cartwright wanted to examine the cash flows from the Alison Green project to see whether the source of return suggested an appropriate match of people to property. There are three sources of cash from a real property investment:

1. *Before Tax Cash Flow*
2. *Tax Effects*
3. *Future Value*

He separately listed the annual cash flows from each source for Alison Green and discounted them at the project's internal rate of return of 14.93%. This allowed him to look at the present values of each cash stream and compare the separate streams to one another and the initial investment. Since the internal rate of return can be found by discounting the cash flows at a rate which makes the net present value of the project zero, i.e., discounted costs equal discounted benefits, each separate discounted income stream could be compared with the total initial investment to identify the proportionate sources of benefits. **Exhibit 8** illustrates his analysis for Alison Green. The results are summarized in **Exhibit 9**.

Income tax consequences are important. In the early 1980s, with the shorter 15-year depreciation schedules, properties often generated losses that could be used against other income. Today, albeit at lower levels, depreciation still helps to minimize taxes and make after tax returns more favorable than an investment in, for example, taxable bonds. Investors are especially concerned that the depreciation deduction exceed the mortgage amortization, which is non-deductible for tax purposes. In the case of Alison Green, the income tax payable as a percentage of before tax cash flow rises from 21% in year 1 to 29% in year 10.

Exhibit 8 Breakdown of 14.93% Internal Rate of Return ($000)

Allison Green **IRR: 14.93%**

	Cash Flow Before Tax		Income Tax		Futures		Total	
Year	Actual	Discounted	Actual	Discounted	Actual	Discounted	Actual	Discounted
1	$434.31	$377.90	($91.87)	($79.93)	$0.00	$0.00	$342.44	$297.97
2	$460.41	$348.59	($102.60)	($77.68)	$0.00	$0.00	$357.82	$270.91
3	$487.30	$321.03	($113.70)	($74.90)	$0.00	$0.00	$373.60	$246.13
4	$515.00	$295.21	($125.18)	($71.76)	$0.00	$0.00	$389.82	$223.46
5	$543.52	$271.10	($137.06)	($68.37)	$0.00	$0.00	$406.46	$202.74
6	$572.91	$248.65	($149.36)	($64.82)	$0.00	$0.00	$423.55	$183.82
7	$603.17	$227.78	($162.08)	($61.21)	$0.00	$0.00	$441.09	$166.57
8	$634.34	$208.44	($175.26)	($57.59)	$0.00	$0.00	$459.09	$150.85
9	$666.45	$190.55	($188.89)	($54.01)	$0.00	$0.00	$477.56	$136.54
10	$699.52	$174.03	($203.00)	($50.51)	$6,421.02	$1,597.48	$6,917.53	$1,721.00
Total	$5,616.93	$2,663.30	$(1,449.00)	$(660.77)	$6,421.02	$1,597.48	$10,588.95	$3,600.00
Percent		73.98%		-18.35%		44.37%		100%

Exhibit 9 Percent of Total Benefits (at Internal Rate of Return)

	Alison Green	900 Stony Walk	Ivy Terrace	The Fowler Building
Before Tax Cash Flow	73.98%			
Tax Benefits	(18.35%)			
Future Value	44.37%			

Angus Cartwright then examined the breakdown of Alison Green's "Futures" into components on a simple proportionate basis (**Exhibit 10)**. It was apparent that the increase in sales price over time was an important part of the total "future" cash flows, but capital gains taxes substantially reduced the net cash flow to the seller.

Exhibit 10 Breakdown of Futures

	Alison Green	900 Stony Walk	Ivy Terrace	The Fowler Building
Return on Initial Cash	$3,600			
Recapture Mtg. Amortization	$1000.3			
Increase in Sales Price	$2,900			
25% Tax on Depreciation	($681.82)			
Capital Gains Tax on Increased Sales Price[a]	($397.5)			
Net Cash From Sale (Total[b])	$6,420.98			

[a]Gain reduced by increase in Net Book Value as a result of Capital Expenditures taken.

[b]Total $ return of futures as taken from **Exhibit 8**.

Cartwright felt that the "Breakdown of Futures" gave him information that would be useful in advising his clients. The breakdown suggested the need for careful planning of the eventual sale. It highlighted the impact of the growth in projected sales price, the rate and amount of mortgage amortization, and the rate and amount of taxation. He believed that by forcefully bringing the impact of these variables to his clients' attention, he could help them understand better the assumptions underlying their actions.

Angus Cartwright had some additional analysis and some hard thinking to do. He decided to repeat his analysis for 900 Stony Walk, Ivy Terrace, and The Fowler Building. He wanted to match the needs of his clients with the characteristics of the properties and the returns they offered. He felt this was the best way to select an investment for each of the DeRights. Cartwright wished to test his intuitive perceptions of the properties against the ranking of each project, although he knew that differences in rankings could be due to differences in the implicit assumptions underlying each measure and the size of the original investment in each project.

Cartwright was not about to make a purchase without additional field work and analysis. He was concerned whether the four properties provided enough geographic diversity in a real estate portfolio. For now, he thought they did and he liked the fact that they were all reasonably nearby giving him greater control should he need to assert himself should issues arise. However, his analysis would allow him to establish sensible priorities upon which he could efficiently allocate his time.

Appendix

Method for Financial Analysis of Income-Producing Real Estate

1. Establish the following variables:

   A. ***Gross Purchase Price*** or construction cost.
   B. ***Depreciable base*** which is gross purchase price less land value (land value is either actual value of land or is proportionate to the amount of real estate tax attributable to land.)
   C. ***Depreciable life*** of building (capital cost recovery period).
   D. Method of Depreciation.
   E. Estimated Sales Price.
   F. Estimate Year of Sale.
   G. ***Cash Flow from Operations*** (Free & Clear) for each year of ownership. (Gross less—Vacancies, Operating Expenses, Capital Reserves and Real Estate Taxes).
   H. Annual Increase or Decrease in Cash Flow from Operations (% or $).
   I. Capital Expenditures such as tenant improvements, leasing commissions or a structural replacement such as a new roof, elevator or parking lot (if any).
   J. Leasehold Payments (if any).
   K. Equity Investment Required.
   L. Amount of Mortgage or Mortgages.
   M. Interest Rate, Term, Amortization Period and Annual Carrying Cost of Mortgage or Mortgages.
   N. Income Tax Bracket of Owner (if unknown, use 35% rate).

2. ***Determine Cash Flow Before Income Taxes*** by deducting capital expenditures, leasehold expenses and financing charges (interest and principal) from cash flow from operations. The ratio of cash flow before income taxes to cash investment gives simple return on investment, sometimes known as the cash on cash return. The ratio of cash flow from operations to total cost of investment is the free and clear return or the capitalization rate.

3. Determine ***Taxable Income*** by deducting leasehold expenses (if any), interest charges, and depreciation from cash flow from operations for each year (not reserves or principal payments). Annual depreciation is calculated by dividing the depreciable base by the total economic life if the straight-line method is used.

4. Determine ***Income Tax Payable*** by multiplying taxable income by the income tax bracket of the owner.

5 Determine ***Cash Flow After Income Taxes*** by deducting income tax payable from either cash flow before income taxes or from taxable income plus depreciation less amortization and capital reserves.

6. Determine ***Gain on Sale*** from the future sale of property by deducting from net sales price, the book value of the property (original purchase price plus capital improvements less depreciation taken).

7. Determine the taxes on depreciation by adding up all depreciation taken and multiplying by 25%.

8. Determine the ***Capital Gains Tax*** payable on sale by applying the appropriate capital gains tax to the remaining gain. If an installment sale, the tax paid each year is generally based on the ratio that the cash received bears to the total consideration for the equity of the property.

9. ***Determine Net Cash Flow from Sale*** by subtracting from the net sales price any mortgage balances and any taxes payable.

10. ***Determine Internal Rate of Return*** by applying the appropriate discount rate from the present value tables to the net after tax cash flow for each year, until the sum of these figures approximates the initial cash investment.

11. If the internal rate of return is known, the relative importance of each of the component cash flow streams can be ascertained by discounting the net after-tax cash flows of each stream at the internal rate of return.