UNIVERSITY HONORS PROGRAM

SENIOR PROJECT - APPROVAL

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PROJECT TITLE: Market Square Development An Economic Analysis and Financial Feasibility Study

I have reviewed this completed senior honors thesis with this student and certify that it is a project commensurate with honors level undergraduate research in this field.

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Date: 12/12/02

Comments (Optional):

Market Square Development

An economic analysis and financial feasibility study.



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Honors Program
December 9, 2002

EXECUTIVE SUMMARY

This project seeks to provide a top-down economic analysis and financial feasibility of the current redevelopment plans for downtown Knoxville, particularly in the Market Square area. This project can be divided into two parts. The first is a qualitative analysis that will seek to evaluate and analyze the current economic prospects and risks inherent in the plan. Included in the analysis will also be an overall evaluation as to the potential success or failure of commercial development in the Market Square area. Also included in the qualitative analysis will be a brief comparison to other, recent successful developments in Memphis, TN, and Chattanooga, TN.

The second part of this project is a quantitative analysis of several of the proposed units for commercial and residential development in Market Square. The details for those units are provided by David Dewhirst, of Dewhirst Properties, Inc., which owns/operates 12 of the 36 buildings that line both sides of the square. The integral part of this quantitative analysis will be a financial feasibility based on calculations of net present value and internal rate of return for Dewhirst's expected cash flows, which I will assume to be representative of the financial success/failure for the whole square. These calculations will be performed via a spreadsheet and will be based on future estimated cash flows and loan repayment schedules. A majority of the second half of this paper will provide explanations for the many different stages and worksheets in the spreadsheet analysis.

I will conclude this project with a most-likely case scenario for the financial success or failure of Dewhirst's properties based upon my calculations of the future after-tax cash flows. Realizing that David Dewhirst owns nearly half of the retail square

footage that will be developed in Market Square, I assume that the financial success of failure of Dewhirst's properties will be representative of the success of failure of the Market Square development as a whole. Accompanying this financial scenario, I will give my conclusions and recommendations on Market Square development as a whole.

INTRODUCTION

Market Square lies in the heart of downtown Knoxville. It is a small area of about three blocks in length that is bounded by Wall Street to the north; Gay Street to the east; Union Street to the South; and Market Street to the West (see Appendix I). Today, there are a total of 36 parcels—all privately owned—that surround the square. Most of the buildings surrounding the plaza are two stories tall, with a couple of the buildings standing three stories tall. Square footage for each floor of the units is approximately 2,000. There is a total of about 100,000 square feet available on all the ground floors of the units[5]. There is also Krutch Park, a small, wooded area that serves as a central park for the square. On the north end of Market Square is a stage, which is fully equipped to support outdoor concerts of up to two to three thousand people.

Downtown Knoxville also contains two other elements worth noting: Gay Street and the Old City. Gay Street is the main street in downtown Knoxville, as both the 1st Tennessee and Union Planters buildings (the two tallest buildings in Knoxville) are addressed there. Also located on Gay Street is the Tennessee Theatre, a historic theatre that seats around 3,000 peopled and often holds concerts. On the other hand, the Old City, centered at the corner of Jackson Avenue and Central Street, just northeast of downtown, is the popular nighttime spot in downtown. At present, there are some 8 bar

and grills in the Old City, including Blue Cats, Spicy's, Lucille's, Manhattan's, and Patrick Sullivan's. All of these are well-established nightspots among the 350 or so residents of the Old City as well as students from the University of Tennessee. There are also several restaurants in the old city, as well as a couple antique stores and coffee shops.

POPULATION/DEMOGRAPHICS

As of 2000, total population for the city of Knoxville is 173,890 and 382,032 for Knox County[13]. Population for downtown Knoxville is approximately 1,250, with 350 of those residents living in the Old City[13]. Thus, less than 1% of the Knoxville population lives in downtown. This percentage is remarkably small for any normal city and suggests that some residential expansion should be implemented.

Knoxville is the largest city in East Tennessee and the third largest city in the state. The geographic size of Knoxville is 99.4 square miles[11].

ADVANTAGES OF KNOXVILLE

Knoxville is typically viewed as a favorable place to live with many attributes that make it an enjoyable city. According to the Millennium Edition of Places Rated Almanac, Knoxville is rated first in the United Sates to live in among mid-sized cities (cities with less than 500,000 in population but greater than 100,000 people)[10].

Knoxville enjoys a rather low cost of living. According to the ACCRA Cost of Living Index, which values the cost of living in a city based upon various factors such as housing prices, rent prices, grocery costs and utilities prices, as of the 1st quarter, 2002,

Knoxville has a cost of living index of 88.7 (the national average is 100)[10]. Thus, Knoxville is a very inexpensive city to live in when compared to some of the other cities in the southeast such as Atlanta, GA (99.0), Nashville, TN (91.8), and Chattanooga, TN (92.1). For comparison, many U.S. cities have extremely high costs of living, such as Chicago, IL (148.0) and New York, NY (218.6)[10]. Much of the reason for Knoxville's low cost of living index can be attributed to very low utility rates made possible by the Tennessee Valley Authority, which, as mentioned above, is located adjacent to Market Square.

Knoxville also enjoys a very favorable climate, with both moderate temperatures and rainfalls. The average low temperature for any month never goes below 20 degrees fareignheit, and the average high never exceeds 90 degrees Fahrenheit. Average annual temperature is 60 degrees and annual average precipitation is a moderate 47.14 inches[15].

Knoxville also enjoys a solid corporate base of companies and firms. There are 18 major corporations that are based in Knoxville, some of the most notable being Phillips Consumer Electronics, Tennessee Valley Authority, Goody's, Covenant Health Systems, Clayton Homes, and Sea Ray[15]. It is worth noting that the Brunswick Boat Group, which owns the Sea Ray division in Knoxville, has recently decided to move its world headquarters to downtown Knoxville, which should add about 200 employees to the current downtown workforce of nearly 21,000 people[5].

DOWTOWN DEVELOPMENTS

There are several other current developments that are important to the development of Market Square. At present, construction is nearly finished on two major

residential complexes each located on the 100 block of South Gay Street. The first is the Sterchi Building, an historic building that is being completely renovated to house some 100 residential apartments and 200 tenants. Right next to the Sterchi Building is the Emporium, another historic building, which will consist of 43 apartments in which some 50 to 70 people are expected to reside. These renovations are very advantageous for Market Square redevelopment, as they will add about 20% to the number of people currently living downtown, bringing the total number of people who live downtown to approximately 1,500 people[4].

Another important development in downtown Knoxville is the recent approval by a Senate committee for construction on a $17 million central bus station in downtown Knoxville. The approval, which comes from the Senate Appropriations Committee (headed by Fred Thompson and Bill Frist), states that funding for the bus station will be split between the city, state and federal governments, with Federal officials funding 80 percent of the cost, and the city and state splitting the remaining 20 percent. The Senate Appropriations Committee has currently already pledged $3.4 million to Knoxville to get the construction underway. This central bus station will serve as an anchor for downtown transportation, with routes running throughout Market Square and Gay Street. The station, which will most likely be located on the block bounded by Gay and State streets and Union and Clinch avenues (See Appendix I), will most likely use the current diesel vehicles as well as some possible hybrid vehicles, which will be powered by both gasoline and electricity. Construction on the new bus station is scheduled to be finished in 4 years[9].

Another recent downtown development is the recent completion of the $93 million Knoxville Convention Center[3]. Spearheaded by mayor Victor Ashe, the convention center, located on at 701 Henley Street on the corner of Henley Street and Cumberland Avenue, is a state-of-the-art center that boasts some 500,545 total square feet[12]. The Knoxville Convention Center offers a wide variety of options for meetings, conventions, or guest speakers, as it contains many different facilities within its three floors of space. The center offers a 120,000-square-foot exhibit room, a 27,300-square-foot ballroom, a lecture hall with 461 seats, and 14 different meeting rooms of varying sizes[12].

The completion of the Knoxville Convention Center will prove to be a very important benefit to Market Square development. Not only does the center add an important element to a downtown that every successful urban city has, it also will add a noticeable and measurable economic stimulus to the city of Knoxville and its downtown businesses. According to estimates by some local officials, if the Knoxville Convention Center meets its projected goals in booked events and meetings over the next five years, then it will bring a total economic stimulus of approximately $270 million to the city of Knoxville over the next five years[12]. According to city officials, if these projected incomes are correct, then part of the cash flows from the convention center will fund construction of a new hotel to accompany the convention center.

Throughout the summer and early fall, Market Square has held the "Sundown in the City", a free concert series held every Thursday night. Each concert usually features two to three local and regional bands that play on stage to audiences of approximately

four to five hundred people. The Sundown in the City series has helped increase awareness of Market Square and has been a surprising success.

CURRENT STATUS

At present, most of the 36 units on the square lie vacant, with some currently under renovation and repair. There are currently 6 retail establishments that operate in the square: Tomato Head, a trendy, popular restaurant; Soup Kitchen, a small restaurant that is mainly open for lunch; Preservation Pub, which is more of a night spot with its wide selection of microbrew and imported beers; Reruns, a vintage used-clothes store; MacLeod's, an Irish pub; and Subway, which is located on the North end close to Summit Hill.

Of these retail establishments, Tomato Head generally experiences the most success, as it has become a favorite amongst downtown workers, especially TVA employees. Preservation Pub is also fairly successful, although it competes with the Old City nightlife. Success for the Soup Kitchen and Subway is much more limited as these two places struggle to maintain acceptable sales levels.

After some five to ten years of planning, the City Council and the Knoxville City Development Council (KCDC) have just recently approved Market Square development. Kinsey Probasco, an urban development firm out of Chattanooga, TN, along with Dewhirst Properties, is in charge of leading the developments. Both Kinsey Probasco and Dewhirst Properties are working with the owners of the parcels in the square to work together in their developments in order to further success of Market Square development as a whole.

On November 7 of this year, project developers, city officials, and Market Square residents gathered in Market Square for the official groundbreaking, marking the first step in a five-month, $8 million construction period in which much of the square will be given major renovations and façade improvements for the public portions of the square. Included in the plans for the five month construction period is the renovation of Krutch Park, which will extend the park all the way to Gay Street[1].

Private commercial and residential developers and Market Square owners are currently in the construction and renovation stages in developing the many different parcels that line each side of the square. David Dewhirst of Dewhirst Properties began construction in late November on some 60,000 square feet of property in Market Square and expects to complete all construction and developments in nine to twelve months.

FINANCIAL FEASIBILITY ANALYSIS

The second part of this project will include a financial feasibility analysis of the development of approximately 55,000 square feet of commercial and residential properties in Market Square. All of these properties are owned by Dewhirst Properties and are currently under renovation and construction. Included in the financial analysis will be a loan repayment schedule; a projected net income statement; calculations of before-tax and after-tax cash flows; calculations of after-tax internal rate of return and net present value; and a scenario analysis for the internal rate of return and net present value of the development. This financial feasibility analysis will be constructed via spreadsheet using Microsoft Excel. Although these properties that I am analyzing represent approximately one-half of the total Market Square property to be developed, it is safe to

assume that a profitability analysis of these 55,000 square feet of retail and residential developments will provide a practical and applicable analysis and gauge for the success or failure of the Market Square developments as a whole.

All of the information used in the financial analysis, including purchase and renovation costs, expected lease incomes, operating expenses, loan calculations, real estate taxes, and property information (which is basically all of the information on the first three pages/worksheets in the spreadsheet), were supplied to me by David Dewhirst per my four meetings with him. All of the worksheets after the first three, beginning with the Leasing Schedule worksheet, are my calculations and were completed using many different real estate finance principles and foundations. Any and all of this information is to be considered confidential, as it represents some of David Dewhirst private financial information.

The rest of this section will provide a written explanation and analysis of the spreadsheet calculations and forecasts. It will provide a general explanation of many of the steps used in developing a profitability analysis and forecast of future cash flows. This project will then conclude with a discussion of the scenario analysis at the end of the spreadsheet and a recommendation for Market Square development.

Background

David Dewhirst owns 60,000 square feet of property in Market Square. Only 55,000 square feet will be developed, however, as some 5,000 square feet is space that will not directly generate income, such as hallways, stairways, utility closets, etc. Approximately half of his property will be renovated for residential use, with the other

half renovated for commercial use. He owns a total of 26 units, of which 20 will be developed for residential use, with the remaining 6 units to be developed for commercial use. The residential units will be apartments, primarily one and two-bedroom units, that will be rented out by Dewhirst Properties. All of the commercial units will be developed for retail use only. Expected retailers include primarily restaurants and bar and grills, with the possibility of one or two of the units being a bookstore or an apparel/clothing store.

Project Costs

All of the information and data on the 'Costs' worksheet were provided by David Dewhirst. As can be seen on the 'Costs' worksheet, David Dewhirst purchased all of the 60,000 square feet of property in Market Square for $650,000 (Appendix II-A). Renovation costs are expected to be $75,000 for each of the 20 residential units, for a total renovation cost of $1,500,000 for all of the residential units. Renovation costs for the 6 commercial units (30,000 total square feet) are expected to be $35 per square foot, for a total commercial renovation cost of approximately $1,000,000. Also include in the renovation and development costs are several "soft costs," which include some of the other costs that are associated with renovating and developing the properties. As can be seen on the 'Costs' sheet, these include such costs as architect and engineer costs, construction interest, real estate taxes for the construction, and marketing and management costs. All of these costs are calculated based on the estimates of the mortgage that Dewhirst will use to finance the project. For example, the lender-financing fee is calculated as 1 percent of the cost of the total mortgage, which is calculated on the 'Loan Calculation' worksheet. The total project cost, which includes the

construction/renovation costs and the soft costs associated with the development, is estimated to be $3.4 million.

Loan Calculation

As illustrated in the 'Loan Calculation' worksheet, the majority of the costs of the development of these 20 residential and 6 commercial units will be financed via a mortgage/loan, which will most likely come from a local commercial bank or a mortgage banking company. David Dewhirst plans on taking out a 15-year, fully amortized loan, based on a 7 percent annual interest rate. It is expected that the amount he is able to borrow will be approximately 80 percent of the property's appraisal value. In order to forecast the amount of the loan that Dewhirst will need to borrow, he uses an income capitalization approach based on a direct capitalization rate. This approach estimates the total value of a property "based on the principle that the value of a property is related to its ability to produce cash flow"[2]. This valuation method uses a capitalization rate (usually around 10 percent) that is basically the ratio of a property's annual net operating incomes to its sale prices[2].

In most real estate development situations, there are usually several similar properties in the same area that can be used as a benchmark or comparison for valuation purposes. For example, if one were developing a restaurant in a major urban city, such as New York, then a developer or an appraiser could find comparable restaurants in the same neighborhood that have recently sold ownership. Then, the developer or appraiser could obtain the restaurant's annual net operation income; dividing the sale price of the restaurant by the net operating income will yield a capitalization rate. This capitalization

rate can then be used as a sort of benchmark for estimating market valuations for other, similar properties in the same area that are to be developed as a restaurant.

However, in Market Square, there are only a few restaurants in existence, so Also, since David Dewhirst will be developing his retail and residential properties from vacant buildings that have not previously been generating any sort of cash flows, Dewhirst does not have any net operating income numbers to work with. Thus, he does not have any capitalization rates to use as benchmarks. However, capitalization rates are usually in the 10 percent area, and with enough experience in real estate development, one can usually provide a reasonable estimate of the capitalization rate that a property will be based upon in its valuation. For his properties, Dewhirst uses an 11 percent capitalization rate (Appendix II-C). Dividing net income by 11 percent will yield an estimate of the valuation of Dewhirst properties.

Dewhirst must estimate the net operating incomes that his properties will generate in one year. As can be seen in the 'Loan Calculation' worksheet, Dewhirst estimates that he will be able to rent out each of his 20 residential units for $1,200 a month—or $14,400 a year. Total annual residential income for all 20 residential units is thus expected to be $288,000 (Appendix II-C). Each of 6 commercial units are projected to be leased out for $4,500 a month, which translates to a total of $324,000 in annual income from leases from all of the 6 commercial units (Appendix II-C). Dewhirst will also generate approximately $18,000 per year from some storage space in Market Square that he expects rent out. Also included in the net income calculations is a vacancy factor, which is a percentage of the total property that is expected to be vacant at various times due to changing tenants and/or inability to fill all of the units with tenants. Dewhirst estimates

this vacancy factor to be 5 percent of the combined income from the residential and commercial properties—which translates to a loss of approximately $30,000 a year (Appendix II-C). Effective gross income is expected to be approximately $600,000 a year.

In order to project net income, Dewhirst must also estimate future operating expenses. These operating expenses include such costs as management costs, advertising/marketing expenses, utilities expenses, and insurance costs. Operating costs are expected to be approximately $169,000.

Subtracting the $169,000 in operating costs from the $600,000 a year in estimated effective gross income yields a projected annual net operating income of $430,772. Dividing this net operating income by the 11 percent capitalization rate yields a valuation for Dewhirst's properties of $3,916,109. This is Dewhirst's estimate of the value of his properties based upon expected incomes and an 11% capitalization rate.

In order to limit their risk and exposure, lenders will rarely ever finance a development for the total valuation of the property. Usually, as is the case here, lenders will only finance 80 percent of the fair market valuation. Thus, Dewhirst expects to get a loan for 80 percent of the $3,916,109 million valuation, or $3,132,887. Remembering that total development costs total $3,440,887 (Appendix II-A), Dewhirst will have to finance the difference in these costs and the amount he will be able to borrow. This difference, which is calculated to be $307,999, represents the equity portion of the investment and the initial cash outflow for the development; that is, the amount that David Dewhirst will have to invest out of his own pockets.

Leasing Schedule

This worksheet is merely a projection of how long it will take to rent out the residential and commercial units. This project estimates that all of the units will be rented out and leased out within a year after construction and renovation is complete. The commercial units are expected to be leased out in a schedule of about one every other month, as is illustrated in the 'Leasing Schedule' worksheet. Dewhirst expects to rent out his residential units quicker, with all units completely rented out within six months after completion of construction and renovation. Net operation income for the first year is based on this leasing schedule, with most of the units only paying rent and leases for a fraction of year one. It should be noted that this leasing schedule is somewhat arbitrary, as the actual leasing schedule could end up rather different.

Amortization Schedule

The loan for this development is a 15-year, fully amortizing, constant payment mortgage loan based on a seven percent annual interest rate. This loan will have level monthly payments that are calculated on the original loan amount ($3,132,887) at a fixed 7% annual interest rate for 15 years. The monthly payments include interest and some repayment of principle. At the end of the 15 years, the original loan amount will be completely repaid, or fully amortized.

The loan monthly payments are calculated by solving for a monthly payment that will fully repay the loan amount after 15 years and earn the lender seven percent interest compounded monthly. Calculating this payment "is really no more than finding the present value of an annuity"[2]. This can be done by simply multiplying the original loan

amount by a mortgage loan constant (which can be found in a table that gives monthly payments for various loan terms for a seven percent annual interest rate). In this case, the loan constant is approximately 0.008998. On the worksheet 'Amortization Schedule' (Appendix II-E), this corresponds to a monthly mortgage payment of $18,275.17 ($337,911.29 annually). The interest component of this monthly payment is found by multiplying the beginning loan amount by the monthly interest rate, which is .07 (7%) divided by 12. The difference between the monthly loan payment and the interest component is the loan amortization (or principal reduction) for each month. As can be seen in the 'Amortization Schedule' worksheet, interest payments are very high in the first couple of years, as the loan balance at the beginning of the term is very high, and thus, interest payments are very high. During the last couple of years of the loan, the principal has decreased substantially, and thus, most of the monthly payments contribute to principal reduction. These interest and amortization patterns are consistent with the nature of a fully amortizing, constant payment mortgage loan.

Depreciation

As properties age, they experience depreciation due primarily to physical deterioration, which decreases the economic value of a property[2]. The nature of U.S. real estate tax laws is such that depreciation is a tax-deductible expense; thus, it is subtracted from net operating income before figuring the amount of income that will be taxed. It should be noted at this point that, although depreciation is subtracted from net operating income, it is not an actual cash outflow for the owner of the property, and thus is not

included in the later cash flow calculations. Depreciation is calculated to find the amount of taxes, which are an actual cash outflow that will be paid each year.

For this project, depreciation is calculated based on the costs of renovation (including soft costs). The purchase price for the property is not included. In the worksheet 'Depreciation,' these renovations and soft costs total approximately $2.75 million (Appendix II-8). Based upon a 39-year depreciation schedule, this results in annual depreciation of $70,600 ($2.75 million/39).

Net Operating Income

This worksheet forecasts the net operating income for Dewhirst's properties over the next five years. Most of this information comes from the 'Loan Calculation' worksheet, which gives the projected net operating incomes for the first year in operation. In the 'Net Operating Income' worksheet (Appendix II-H), these incomes and operation expenses are extended for a five-year period.

At the bottom of this worksheet, calculations for taxable income are provided. As mentioned above, depreciation is a tax-deductible item and is thus subtracted from net operating income. Interest payments on the mortgage loan are also tax-deductible and are also subtracted from net operating income. These interest payments are calculated by summing the interest components of the monthly payments on the mortgage loan on worksheet 'Amortization Schedule' (Appendix II-E) for each year.

Subtracting depreciation and interest payments from net operating income yields taxable income and is calculated for the next five years. Using a tax rate of 28 percent, annual income tax for the next five years is calculated (Appendix II-H). These annual

income taxes will later be subtracted from before-tax cash flows to yield the after-tax cash flows.

Sale of Property

In providing a financial analysis of an income-producing property, it is necessary to calculate net operating incomes and projected cash flows beyond the five-year forecast. After five years, projected net operating incomes and cash flows level out. Thus, it is necessary to assume that the property will be sold after five years. This is done for two reasons. First, if we assume the property has an economic life of 50 years, projecting cash flows from years 5 through 50 would be impractical, as it is simply too far into the future to predict[2]. Second, the sale price of the property will be based upon a price that reflects the property's projected income stream over its remaining life, so it incorporates the current estimates for net operating incomes at the end of year five and applies them as if they were to continue to remain at the same level after year five. Although David Dewhirst may not currently have any plans of ever selling his property, it is necessary to project a sale of the property at the end of year five for the reasons listed above.

In the 'Sale' worksheet (Appendix II-I), to calculate the resale price at the end of year five, I used the capitalization method, which is the same method used to calculate the fair market valuation in the 'Loan Calculation' worksheet (Appendix II-C). Dividing year five net operating income by the 11 percent capitalization rate yields a sale price of approximately $3.9 million.

In order to calculate the cash flows from the sale, the mortgage balance on the property at the end of year five must be calculated, as the mortgage balance must be paid off entirely upon the sale of the property. The mortgage balance at the end of year five is calculated on worksheet 'Summary Loan Information' (Appendix II-J). This balance is subtracted from the sale price to yield the before-tax cash flow from the sale of the property.

In order to calculate the actual capital gain on the sale of the property, the adjustable basis of the property must be subtracted from the sale price. The adjustable basis of a property is equal to the purchase price of the property plus any improvements less the depreciation that has accumulated over the life of the property (in this case, five years). The adjustable basis is calculated on the worksheet 'Adjustable Basis' (Appendix II-J).

Subtracting the adjustable basis from the sale price results in the total capital gain on the sale. This represents the amount that is subject to taxation and can be divided into two parts: gain from price appreciation and gain from accumulated depreciation (which was calculated on worksheet 'Adjustable Basis'—see Appendix II-J). Each are taxed at different rates, with price appreciation subject to 20 percent taxes and accumulated depreciation subject to 25 percent taxes. Subtracting the taxes from the before-tax gain on sale yields the after-tax gain on sale, as can be seen at the bottom of the worksheet (Appendix II-F).

Before-Tax Cash Flows

The before-tax cash flows for years zero through five are calculated in the worksheet 'BTCF' (Appendix II-L). The before-tax cash flows for this project are calculated by subtracting the annual debt service (the sum of the monthly loan payments for each year) from the projected net operating incomes for years one through five. In year five, the before-tax gain on sale, calculated on the 'Sale' worksheet, is included in the before-tax cash flow. The year zero before-tax cash flow is simply the equity required by David Dewhirst—a cash outflow—to fund the development and is calculated in the 'Loan Calculation' spreadsheet (Appendix II-C). It is represented as year zero because the equity investment must be paid before the completion of the development of the project, as the mortgage is needed to fund the renovation of the residential and commercial properties. Note that year one before-tax cash flow is also negative, representing a cash outflow. This is due primarily to the low net operating income that is a result of the time it takes in year one to rent and lease out the units in the project. The total before-tax cash flows for years zero through five are given at the bottom of the 'BTCF' spreadsheet (Appendix II-L).

After-Tax Cash Flows

The after-tax cash flows are calculated on the worksheet 'ATCF' (Appendix II-M). These are computed by subtracting the income tax payments (as calculated in the 'Income Statement' worksheet—See Appendix II-H) from each year's before-tax cash flows. In year five, taxes from the gain on sale (as calculate in the 'Sale' worksheet—See

Appendix II-I) are also subtracted from the before-tax cash flows to yield that after-tax cash flow in year five.

Internal Rate of Return and Net Present Value

The basic premise of finance is the concept of the time value of money. The time value of money is based on the premise that one-dollar received today is worth more than one dollar received one year from now. This premise holds true because that dollar received today can be invested and earn interest over the course of a year, making it worth more than one dollar in a year from now. Furthermore, when investing money for more than one investment period, you receive the benefits of compounding interest: interest that is accumulated on the principal investment plus any interest previously earned. For example, investing $1,000 in a certificate of deposit in a bank—a very safe investment—will currently pay an investor approximately 3% in annual interest. Thus, the $1,000 today is worth $1,030.00 in one year and $1,060.90 in two years. The time value of money also works in reverse. Taking the same example, it is safe to assume that $1,060.90 in two years from now is really worth $1,000.00 today. Thus, any future cash flow(s) from an invest must be discounted by a rate that represents an amount that one could earn on investment had he/she invested their money elsewhere.

Thus, when faced with a stream of future expected cash flows, as in these after-tax cash flows, the time value of money must be taken into account. Although this project is projected to earn some substantial positive cash flows in years two through five, a financial analysis of these cash flows must take into account the time value of money, as there are two years of negative cash flows. Both the internal rate of return

(IRR) and the net present value (NPV) calculations use the time value of money in their computations.

Using the after-tax cash flow projections, I used Excel to calculate the internal rate of return and net present value for David Dewhirst's whole development. Using a scenario analysis, I calculated the IRR and NPV for three different scenarios: best case, most likely case, and worst case. It should be noted that up until this point, I have been using the forecasts—primarily the rental and vacancy rates—that David Dewhirst is using. After much analysis of this development as a whole, I will use my own forecasts for the IRR and NPV calculations. Thus, for the most-likely case, I forecast that he will be able to rent his residential units for $1,100 per unit and lease his commercial units for $4,300 per unit with a vacancy rate of 6% (instead of Dewhirst's forecasts of $1,200 and $4,500, respectively). The forecasts for best and worst case scenarios are also on the spreadsheet (Appendix II-N), as well as the corresponding IRR and NPV.

Historic Tax Credit

This worksheet (Appendix II-B) is included in this project primarily for demonstration purposes. It is not completely applicable to this project. The historic tax credit is a federal reimbursement program, whereby the federal government will provide tax credits over a period of five years to a developer who renovates/develops a building that is zoned as historical. At this time, it is unclear (to both me and Dewhirst) as to which of Dewhirst's units, if any, are zoned as historic. However, I have included this calculation as a demonstration as to how to calculate the tax credit if all of his units were deemed historic.

CONCLUSIONS/RECOMMENDATIONS

Based upon my forecasts, I have Dewhirst's properties providing an internal rate of return of 13.04% and a net present value of only $51,763 (See Appendix II-N). Based upon these calculations and my analysis of Market Square development as a whole, I would be very hesitant to recommend initiation of this project. While the internal rate of return is 13%, it is obvious that this project is very risky in many respects.

First, Dewhirst must take out a large mortgage. If he is not able to rent out his residential and commercial units for what he would like, then not only does he stand to lose money (see worst-case scenario, Appendix II-N) on this project, he will most likely be unable to make his mortgage payments of approximately $340,000 per year (Appendix II-L).

Secondly, the scenarios in Appendix II-M demonstrate that this development is very sensitive to the rental rates that Dewhirst will be able to rent his residential and commercial units out. For example, in the worst-case scenario, if Dewhirst is only able to rent out his residential units for $1,000 per unit per month (only $200 less than his forecasts) and his commercial units for $4,000 per unit per month ($500 less per unit per month than Dewhirt's forecasts), then he will have a negative IRR and lose a net present value of approximately $200,000 (Appendix II-N). Thus, the return on this development is very sensitive to these forecasts. In this case, the high sensitivity means a high level of risk.

Thirdly, there are several other scenarios where things could wrong in this development. First, Dewhirst properties could get appraised for less than the $3.9 million

I would also like to thank Dr. Tom Boehm for dedicating his time to meet with me and answer all my questions. Without his help and instructions, this project could not have been done.

that Dewhirst values his properties with his 11% capitalization rate (Appendix II-C). This in turn would mean that the bank would lend him less than the $3.1 million mortgage he wants to take out. Thus, in order to cover his renovation and construction costs, he would have to invest more equity up front (making year 0 cash outflow even higher), which would in turn decrease his IRR and NPV. Also, if any of Dewhirt's units—especially commercial units—are vacant for an extended period of time, say over one year, then his returns will again be negative. There is definitely the possibility that all of these scenarios could occur on top of the worst-case scenario, leaving Dewhirst and the mortgage company who lends him the funds losing a substantial investment.

Finally, based upon my research, I do not believe that downtown Knoxville and Market Square have the stimulus to attract the market that is necessary for Market Square development to be successful. For one, there are only about 1,200 people living downtown. Out of a population of approximately 174,000 people, this corresponds to approximately 0.7% of the population of Knoxville that lives downtown. Secondly, downtown Knoxville does not possess the type of attraction to draw potential customers from other areas of Knoxville, especially West Knoxville which maintains a very large retail market, as there are several book stores, dozens of restaurants, and a full-scale shopping mall with a movie theatre. In short, I do not believe that many consumers will drive from West Knoxville to downtown to shop at stores that are already nearby in their area.

Downtown Knoxville needs an attraction that will draw a sustainable market. In comparison to other recently developed cities, namely Chattanooga, TN and Memphis, TN, downtown Knoxville does not possess a distinct attraction that will allow the

development in Market Square to succeed. Over the past ten years, downtown Memphis has seen some very successful retail and residential developments, with some 15 million square feet of industrial renovation and construction in the downtown area. On top of the commercial developments, the residential population in downtown Memphis has nearly quadrupled over the last ten years, as there are currently an estimated 10,000 people living in the downtown area[6].

However, downtown Memphis possesses a number of attractions that are the integral factor to its successful development. First, there is the Pyramid, a massive basketball arena and concert venue that sits on the banks of the Mississippi river. Second, there is AutoZone Park, home of the Triple-A Memphis Redbirds, the minor league team for the St. Louis Cardinals. Built in the heart of the city, this state of the heart baseball park draws some 12,000 or so fans to the each of the 50 Redbirds games each year[6]. Third, there is the Peabody Hotel, a famous hotel that sits in the heart of downtown. And finally, there is the nationally known Beale Street, an historic street in downtown Memphis that is famous for its Blues music history. There are even several other developments that have aided in the success of downtown Memphis development that are currently underway, such as the construction of a new basketball arena that will host the Memphis Grizzlies professional basketball team and the recent construction of Peabody Place, a $200 million retail center with a 20 screen movieplex.

Chattanooga, TN, is another city that has seen recent successful developments in its downtown area over the last 10 to 15 years. In addition to its growing residential properties, the number of businesses in downtown Chattanooga has also quadrupled over the last ten years as there are some 128 businesses located in downtown Chattanooga,

compared with only 33 businesses in 1990[7]. However, also like Memphis, Chattanooga possesses two attractions in its downtown that have contributed directly to its success. The first is the 22-mile Riverwalk, a corridor that runs adjacent to the Tennessee River. This picturesque walkway was recently made accessible to the public and has attracted many Chattanoogans to the downtown area. The second attraction, The Tennessee Aquarium, is the primary factor in the success of developments in downtown Chattanooga. This $45 million complex draws over a million visitors a year, providing a direct stimulus for attracting consumers to downtown Chattanooga[7].

In short, I do not believe that downtown Knoxville currently possesses an attraction that will draw people to Market Square. There are no sports arenas or stadiums as there are in Memphis, and there is no real tourist attraction like the Aquarium in Chattanooga. Market Square does have a bit of a historic feature to it, but nothing like the Blues music history of Beale Street in Memphis. Furthermore, many Knoxville residents do not even know where Market Square is[5].

Larry Miller, a Tennessee representative and frequent writer for *The Commercial Appeal*, Memphis' daily newspaper, attributes the success of downtown Memphis development to its attractions and their ability to sustain a market, "Development has rippled outward from downtown's successful anchors, providing opportunities for new restaurants, retailers and residences. Success breeds success. Beale Street, the Peabody, AutoZone Park, and the arena all reinforce one another"[8]. Knoxville needs attractions like these to reinforce each other, or the developments will fail and there will be nothing left to reinforce.

It is my recommendation that the City of Knoxville work in conjunction with the private developers and construct a larger plan—with a longer time frame—for developing and renovating downtown Knoxville and Market Square. Developing an entire city takes a lot longer than five years, as it took Memphis nearly 20 years from its initial plans[8]. Emphasis must be put on two areas. First, the downtown are needs an attraction to draw a market to the area. A new minor league baseball team (probably Double-A) with a new stadium in downtown Knoxville is a definite possibility. A tourist attraction similar to the Aquarium, such as the recently proposed Planetarium (which, incidentally, was recently rejected by the city) would also provide the catalyst that would lead to success in downtown Knoxville. And finally, emphasis must be put on increasing the residential population. The Sterchi Building and the Emporium are a good start, but there needs to be more residential developments directly in downtown. Getting more people to live downtown obviously takes a long time, and the City of Knoxville and the private developers need to rethink their current plans and construct a plan that will look at the development of downtown Knoxville from a bigger picture and over a longer time period.

AKNOWLEDGEMENTS

I would like to thank David Dewhirst for allowing me to use his personal properties and investment figures in my project. Mr. Dewhirst has allowed me to analyze the Market Square developments from a financial perspective, which, being a finance major, was my initial goal for this project.

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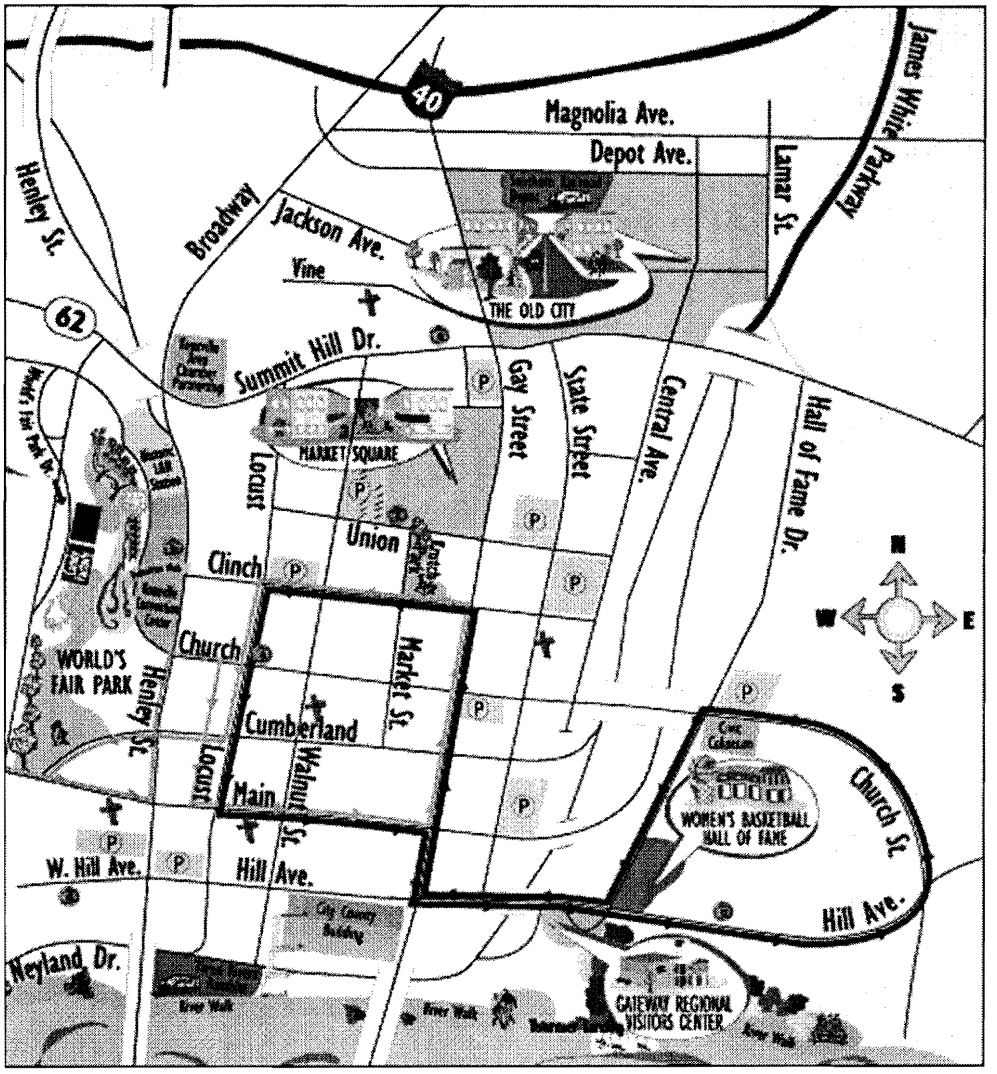
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Appendix I[10]



Appendix II-A

Project Costs

Construction Budget	**# Units**	**$/ Unit**	**Total Costs**		
Acquisition Cost				**$**	**650,000**
Residential Renovation	20	$ 75,000	$ 1,500,000		
Commercial Renovation (ft2)	30000	$ 35	$ 1,050,000		
Structural Stabilization			$ -		
Construction Contingency		2.50%	$ 37,500		
Soft Costs					
Architect & Engineer			$ 25,000		
Construction Interest & carry			$ 99,683		
Title, Recording & Survey			$ 5,875		
Real Estate Tax (under construction)			$ 34,091		
Lender Financing Fee			$ 31,329		
Line of Credit Fee (if applicable)			$ -		
Legal			$ 2,500		
Other			$ 500		
Operating Reserve			$ 1,000		
Marketing, Management & Leasing			$ 3,409		
General Condition Construction			$ -		
Developers Fee			$ -		
Total New Construction & Soft Costs:			$ 2,790,887		
Total Estimated Project Cost:				**$**	**3,440,887**

Appendix II-B

HISTORIC TAX CREDIT EQUITY

(computation includes all costs with the exception of land, existing structure and leaseup reserve)

Apartment Construction/ Renovation	$ 1,500,000	
Office retrofit	$ 1,050,000	
Structural Stabilization	$ -	
Construction contingency	$ 37,500	
AIA & Engineering Fees	$ 25,000	
AIA Inspection Fees	$ -	
Bond Premium	$ -	
Construction Interest	$ 99,683	
Real Estate Taxes (under construction)	$ 34,091	
FHA Inspection Fees	$ -	
FHA Application Fees	$ -	
Lender Financing Fees	$ 31,329	
Legal	$ 2,500	
Title, Recording & Survey	$ 5,875	
Other Expenses	$ 500	
Marketing	$ 3,409	
General Conditions	$ -	
Developers Fee*	$ 50,000	*Deferred (used to increase tax credit calculation)
Total Improvements:	**$ 2,839,887**	
Computation for Historic Tax Credit: (Full credit if not syndicated)	$ 567,977	20%
General Partner Percentage	$ 562,298	99%
Syndicated Tax Credit Value:	**$ 477,953**	85% (% factoring)

Appendix II-C

Loan Calculation

PROJECTED ACQUISITION COST **$ 650,000**

Development Space	# of Units	Unit sq.ft.	Total sq.ft.
Residential Space	20	1250	25,000
Commercial Space	6	5000	30,000
Total Space			55,000

Rental Income	# of Units	Income/Unit	Total Income	Annual Income	
Residential Loft Income	20	$ 1,200	$ 24,000	$ 288,000	
Commercial Space Income	6	$ 4,500	$ 27,000	$ 324,000	
Storage Unit Income		3%		$ 18,360	
Vacancy factor		-5%		$ (30,600)	
Effective Gross Income				$ 599,760	**$ 599,760**

Building Expenses	% of E.G.I.	Per Unit	Total Expense	
Management	5.00%	1,499	29,988	
Payroll	0.00%	-	-	
Advertising/Marketing	1.25%	375	7,500	
Repair/Maintenance	4.17%	1,250	25,000	
Utilities/Grounds	1.25%	375	7,500	
Insurance	1.50%	450	9,000	
Other Expenses	0.83%	250	5,000	
Replacement Reserves	1.67%	500	10,000	
Real Estate Taxes	12.51%	3,750	75,000	
Total Expenses	28.18%	$ 8,449	$ 168,988	**$ (168,988.00)**

Net Operating Income (annual) **$ 430,772**

Cash Flow and Equity Requirements				
Capitalization Rate	11.00%			
Fair Market Valuation			$ 3,916,109	
Estimated Mortgage	80%		**$ 3,132,887**	
Amortization (years/months)	15	180		
Interest Rate	7.00%			
Debt Service (annual)				**$ 337,911**
Debt Service Coverage Ratio:	1.27			
Net Cash Flow (annual)				**$ 92,861**
Total Development			$ 3,440,887	(from sheet 2)
Less: Historic Tax Credit			$ 477,953	(from sheet 3)
Less: Mortgage			$ 3,132,887	
Equity Required - with tax credits			**$ (169,954)**	
Equity Required - without tax credits			**$ 307,999**	

Appendix II-D

Leasing Schedule

Monthly Residential Lease =	$	1,200
Monthly Commercial Lease =	$	4,500

Month	Commercial Units	Residential Units	Revenue from Leases
1		3	
2	1	3	
3		3	
4	1	3	
5		3	
6	1	3	
7		2	
8	1		
9			
10	1		
11			
12	1		$ 381,600
SUM	6	20	

Appendix II-E

Amortization Schedule

Yearly Payment (monthly payment x 12)
$337,911.29

Fixed Payment, Fully-Amortized 15-year Loan

Interest Rate (annual) = 7%
Loan Constant -- 7%, 15 years = 0.00898828271

Year	Month	Beginning Loan Balance	Monthly Payment	Interest (.11/12)	Amortization	Ending Loan Balance
Year 1	1	$3,132,887.00	$28,159.27	$18,275.17	$9,884.10	$3,123,002.90
	2	3,123,002.90	$28,159.27	$18,217.52	9,941.76	3,113,061.14
	3	3,113,061.14	$28,159.27	$18,159.52	9,999.75	3,103,061.39
	4	3,103,061.39	$28,159.27	$18,101.19	10,058.08	3,093,003.31
	5	3,093,003.31	$28,159.27	$18,042.52	10,116.75	3,082,886.55
	6	3,082,886.55	$28,159.27	$17,983.50	10,175.77	3,072,710.79
	7	3,072,710.79	$28,159.27	$17,924.15	10,235.13	3,062,475.66
	8	3,062,475.66	$28,159.27	$17,864.44	10,294.83	3,052,180.83
	9	3,052,180.83	$28,159.27	$17,804.39	10,354.89	3,041,825.94
	10	3,041,825.94	$28,159.27	$17,743.98	10,415.29	3,031,410.65
	11	3,031,410.65	$28,159.27	$17,683.23	10,476.05	3,020,934.60
	12	3,020,934.60	$28,159.27	$17,622.12	10,537.16	3,010,397.45
Year 2	13	3,010,397.45	$28,159.27	$17,560.65	10,598.62	2,999,798.83
	14	2,999,798.83	$28,159.27	$17,498.83	10,660.45	2,989,138.38
	15	2,989,138.38	$28,159.27	$17,436.64	10,722.63	2,978,415.75
	16	2,978,415.75	$28,159.27	$17,374.09	10,785.18	2,967,630.56
	17	2,967,630.56	$28,159.27	$17,311.18	10,848.10	2,956,782.47
	18	2,956,782.47	$28,159.27	$17,247.90	10,911.38	2,945,871.09
	19	2,945,871.09	$28,159.27	$17,184.25	10,975.03	2,934,896.07
	20	2,934,896.07	$28,159.27	$17,120.23	11,039.05	2,923,857.02
	21	2,923,857.02	$28,159.27	$17,055.83	11,103.44	2,912,753.58
	22	2,912,753.58	$28,159.27	$16,991.06	11,168.21	2,901,585.37
	23	2,901,585.37	$28,159.27	$16,925.91	11,233.36	2,890,352.01
	24	2,890,352.01	$28,159.27	$16,860.39	11,298.89	2,879,053.12
Year 3	25	2,879,053.12	$28,159.27	$16,794.48	11,364.80	2,867,688.32
	26	2,867,688.32	$28,159.27	$16,728.18	11,431.09	2,856,257.23
	27	2,856,257.23	$28,159.27	$16,661.50	11,497.77	2,844,759.46
	28	2,844,759.46	$28,159.27	$16,594.43	11,564.84	2,833,194.61
	29	2,833,194.61	$28,159.27	$16,526.97	11,632.31	2,821,562.31
	30	2,821,562.31	$28,159.27	$16,459.11	11,700.16	2,809,862.15
	31	2,809,862.15	$28,159.27	$16,390.86	11,768.41	2,798,093.73
	32	2,798,093.73	$28,159.27	$16,322.21	11,837.06	2,786,256.67
	33	2,786,256.67	$28,159.27	$16,253.16	11,906.11	2,774,350.56

	34	2,774,350.56	$28,159.27	$16,183.71	11,975.56	2,762,375.00
	35	2,762,375.00	$28,159.27	$16,113.85	12,045.42	2,750,329.58
	36	2,750,329.58	$28,159.27	$16,043.59	12,115.68	2,738,213.90
	37	2,738,213.90	$28,159.27	$15,972.91	12,186.36	2,726,027.54
	38	2,726,027.54	$28,159.27	$15,901.83	12,257.45	2,713,770.09
	39	2,713,770.09	$28,159.27	$15,830.33	12,328.95	2,701,441.14
	40	2,701,441.14	$28,159.27	$15,758.41	12,400.87	2,689,040.27
	41	2,689,040.27	$28,159.27	$15,686.07	12,473.21	2,676,567.07
Year 4	42	2,676,567.07	$28,159.27	$15,613.31	12,545.97	2,664,021.10
	43	2,664,021.10	$28,159.27	$15,540.12	12,619.15	2,651,401.95
	44	2,651,401.95	$28,159.27	$15,466.51	12,692.76	2,638,709.19
	45	2,638,709.19	$28,159.27	$15,392.47	12,766.80	2,625,942.38
	46	2,625,942.38	$28,159.27	$15,318.00	12,841.28	2,613,101.11
	47	2,613,101.11	$28,159.27	$15,243.09	12,916.18	2,600,184.92
	48	2,600,184.92	$28,159.27	$15,167.75	12,991.53	2,587,193.39
	49	2,587,193.39	$28,159.27	$15,091.96	13,067.31	2,574,126.08
	50	2,574,126.08	$28,159.27	$15,015.74	13,143.54	2,560,982.54
	51	2,560,982.54	$28,159.27	$14,939.06	13,220.21	2,547,762.33
	52	2,547,762.33	$28,159.27	$14,861.95	13,297.33	2,534,465.01
	53	2,534,465.01	$28,159.27	$14,784.38	13,374.89	2,521,090.11
Year 5	54	2,521,090.11	$28,159.27	$14,706.36	13,452.92	2,507,637.20
	55	2,507,637.20	$28,159.27	$14,627.88	13,531.39	2,494,105.81
	56	2,494,105.81	$28,159.27	$14,548.95	13,610.32	2,480,495.48
	57	2,480,495.48	$28,159.27	$14,469.56	13,689.72	2,466,805.77
	58	2,466,805.77	$28,159.27	$14,389.70	13,769.57	2,453,036.19
	59	2,453,036.19	$28,159.27	$14,309.38	13,849.90	2,439,186.30
	60	2,439,186.30	$28,159.27	$14,228.59	13,930.69	2,425,255.61
	61	2,425,255.61	$28,159.27	$14,147.32	14,011.95	2,411,243.66
	62	2,411,243.66	$28,159.27	$14,065.59	14,093.69	2,397,149.97
	63	2,397,149.97	$28,159.27	$13,983.37	14,175.90	2,382,974.07
	64	2,382,974.07	$28,159.27	$13,900.68	14,258.59	2,368,715.48
	65	2,368,715.48	$28,159.27	$13,817.51	14,341.77	2,354,373.71
Year 6	66	2,354,373.71	$28,159.27	$13,733.85	14,425.43	2,339,948.29
	67	2,339,948.29	$28,159.27	$13,649.70	14,509.58	2,325,438.71
	68	2,325,438.71	$28,159.27	$13,565.06	14,594.21	2,310,844.50
	69	2,310,844.50	$28,159.27	$13,479.93	14,679.35	2,296,165.15
	70	2,296,165.15	$28,159.27	$13,394.30	14,764.98	2,281,400.17
	71	2,281,400.17	$28,159.27	$13,308.17	14,851.11	2,266,549.07
	72	2,266,549.07	$28,159.27	$13,221.54	14,937.74	2,251,611.33
	73	2,251,611.33	$28,159.27	$13,134.40	15,024.87	2,236,586.45
	74	2,236,586.45	$28,159.27	$13,046.75	15,112.52	2,221,473.93
	75	2,221,473.93	$28,159.27	$12,958.60	15,200.68	2,206,273.26
	76	2,206,273.26	$28,159.27	$12,869.93	15,289.35	2,190,983.91
	77	2,190,983.91	$28,159.27	$12,780.74	15,378.53	2,175,605.38
Year 7	78	2,175,605.38	$28,159.27	$12,691.03	15,468.24	2,160,137.13
	79	2,160,137.13	$28,159.27	$12,600.80	15,558.47	2,144,578.66
	80	2,144,578.66	$28,159.27	$12,510.04	15,649.23	2,128,929.43
	81	2,128,929.43	$28,159.27	$12,418.75	15,740.52	2,113,188.91
	82	2,113,188.91	$28,159.27	$12,326.94	15,832.34	2,097,356.57
	83	2,097,356.57	$28,159.27	$12,234.58	15,924.69	2,081,431.88
	84	2,081,431.88	$28,159.27	$12,141.69	16,017.59	2,065,414.29
	85	2,065,414.29	$28,159.27	$12,048.25	16,111.02	2,049,303.26

Year 8	86	2,049,303.26	$28,159.27	$11,954.27	16,205.01	2,033,098.26
	87	2,033,098.26	$28,159.27	$11,859.74	16,299.53	2,016,798.72
	88	2,016,798.72	$28,159.27	$11,764.66	16,394.61	2,000,404.11
	89	2,000,404.11	$28,159.27	$11,669.02	16,490.25	1,983,913.86
	90	1,983,913.86	$28,159.27	$11,572.83	16,586.44	1,967,327.42
	91	1,967,327.42	$28,159.27	$11,476.08	16,683.20	1,950,644.22
	92	1,950,644.22	$28,159.27	$11,378.76	16,780.52	1,933,863.70
	93	1,933,863.70	$28,159.27	$11,280.87	16,878.40	1,916,985.30
	94	1,916,985.30	$28,159.27	$11,182.41	16,976.86	1,900,008.44
	95	1,900,008.44	$28,159.27	$11,083.38	17,075.89	1,882,932.55
	96	1,882,932.55	$28,159.27	$10,983.77	17,175.50	1,865,757.05
Year 9	97	1,865,757.05	$28,159.27	$10,883.58	17,275.69	1,848,481.36
	98	1,848,481.36	$28,159.27	$10,782.81	17,376.47	1,831,104.89
	99	1,831,104.89	$28,159.27	$10,681.45	17,477.83	1,813,627.06
	100	1,813,627.06	$28,159.27	$10,579.49	17,579.78	1,796,047.28
	101	1,796,047.28	$28,159.27	$10,476.94	17,682.33	1,778,364.95
	102	1,778,364.95	$28,159.27	$10,373.80	17,785.48	1,760,579.47
	103	1,760,579.47	$28,159.27	$10,270.05	17,889.23	1,742,690.24
	104	1,742,690.24	$28,159.27	$10,165.69	17,993.58	1,724,696.66
	105	1,724,696.66	$28,159.27	$10,060.73	18,098.54	1,706,598.12
	106	1,706,598.12	$28,159.27	$9,955.16	18,204.12	1,688,394.00
	107	1,688,394.00	$28,159.27	$9,848.96	18,310.31	1,670,083.69
	108	1,670,083.69	$28,159.27	$9,742.15	18,417.12	1,651,666.57
Year 10	109	1,651,666.57	$28,159.27	$9,634.72	18,524.55	1,633,142.02
	110	1,633,142.02	$28,159.27	$9,526.66	18,632.61	1,614,509.41
	111	1,614,509.41	$28,159.27	$9,417.97	18,741.30	1,595,768.10
	112	1,595,768.10	$28,159.27	$9,308.65	18,850.63	1,576,917.48
	113	1,576,917.48	$28,159.27	$9,198.69	18,960.59	1,557,956.89
	114	1,557,956.89	$28,159.27	$9,088.08	19,071.19	1,538,885.69
	115	1,538,885.69	$28,159.27	$8,976.83	19,182.44	1,519,703.25
	116	1,519,703.25	$28,159.27	$8,864.94	19,294.34	1,500,408.92
	117	1,500,408.92	$28,159.27	$8,752.39	19,406.89	1,481,002.03
	118	1,481,002.03	$28,159.27	$8,639.18	19,520.10	1,461,481.93
	119	1,461,481.93	$28,159.27	$8,525.31	19,633.96	1,441,847.97
	120	1,441,847.97	$28,159.27	$8,410.78	19,748.49	1,422,099.47
Year 11	121	1,422,099.47	$28,159.27	$8,295.58	19,863.69	1,402,235.78
	122	1,402,235.78	$28,159.27	$8,179.71	19,979.57	1,382,256.22
	123	1,382,256.22	$28,159.27	$8,063.16	20,096.11	1,362,160.10
	124	1,362,160.10	$28,159.27	$7,945.93	20,213.34	1,341,946.76
	125	1,341,946.76	$28,159.27	$7,828.02	20,331.25	1,321,615.51
	126	1,321,615.51	$28,159.27	$7,709.42	20,449.85	1,301,165.66
	127	1,301,165.66	$28,159.27	$7,590.13	20,569.14	1,280,596.52
	128	1,280,596.52	$28,159.27	$7,470.15	20,689.13	1,259,907.39
	129	1,259,907.39	$28,159.27	$7,349.46	20,809.81	1,239,097.58
	130	1,239,097.58	$28,159.27	$7,228.07	20,931.20	1,218,166.37
	131	1,218,166.37	$28,159.27	$7,105.97	21,053.30	1,197,113.07
	132	1,197,113.07	$28,159.27	$6,983.16	21,176.11	1,175,936.95
	133	1,175,936.95	$28,159.27	$6,859.63	21,299.64	1,154,637.31
	134	1,154,637.31	$28,159.27	$6,735.38	21,423.89	1,133,213.42
	135	1,133,213.42	$28,159.27	$6,610.41	21,548.86	1,111,664.56
	136	1,111,664.56	$28,159.27	$6,484.71	21,674.56	1,089,990.00
	137	1,089,990.00	$28,159.27	$6,358.27	21,801.00	1,068,189.00

Year 12	138	1,068,189.00	$28,159.27	$6,231.10	21,928.17	1,046,260.83
	139	1,046,260.83	$28,159.27	$6,103.19	22,056.09	1,024,204.74
	140	1,024,204.74	$28,159.27	$5,974.53	22,184.75	1,002,019.99
	141	1,002,019.99	$28,159.27	$5,845.12	22,314.16	979,705.84
	142	979,705.84	$28,159.27	$5,714.95	22,444.32	957,261.51
	143	957,261.51	$28,159.27	$5,584.03	22,575.25	934,686.26
	144	934,686.26	$28,159.27	$5,452.34	22,706.94	911,979.33
Year 13	145	911,979.33	$28,159.27	$5,319.88	22,839.39	889,139.93
	146	889,139.93	$28,159.27	$5,186.65	22,972.62	866,167.31
	147	866,167.31	$28,159.27	$5,052.64	23,106.63	843,060.68
	148	843,060.68	$28,159.27	$4,917.85	23,241.42	819,819.26
	149	819,819.26	$28,159.27	$4,782.28	23,377.00	796,442.26
	150	796,442.26	$28,159.27	$4,645.91	23,513.36	772,928.90
	151	772,928.90	$28,159.27	$4,508.75	23,650.52	749,278.38
	152	749,278.38	$28,159.27	$4,370.79	23,788.48	725,489.89
	153	725,489.89	$28,159.27	$4,232.02	23,927.25	701,562.65
	154	701,562.65	$28,159.27	$4,092.45	24,066.83	677,495.82
	155	677,495.82	$28,159.27	$3,952.06	24,207.22	653,288.60
	156	653,288.60	$28,159.27	$3,810.85	24,348.42	628,940.18
Year 14	157	628,940.18	$28,159.27	$3,668.82	24,490.46	604,449.72
	158	604,449.72	$28,159.27	$3,525.96	24,633.32	579,816.41
	159	579,816.41	$28,159.27	$3,382.26	24,777.01	555,039.40
	160	555,039.40	$28,159.27	$3,237.73	24,921.54	530,117.85
	161	530,117.85	$28,159.27	$3,092.35	25,066.92	505,050.93
	162	505,050.93	$28,159.27	$2,946.13	25,213.14	479,837.79
	163	479,837.79	$28,159.27	$2,799.05	25,360.22	454,477.57
	164	454,477.57	$28,159.27	$2,651.12	25,508.15	428,969.41
	165	428,969.41	$28,159.27	$2,502.32	25,656.95	403,312.46
	166	403,312.46	$28,159.27	$2,352.66	25,806.62	377,505.84
	167	377,505.84	$28,159.27	$2,202.12	25,957.16	351,548.69
	168	351,548.69	$28,159.27	$2,050.70	26,108.57	325,440.11
Year 15	169	325,440.11	$28,159.27	$1,898.40	26,260.87	299,179.24
	170	299,179.24	$28,159.27	$1,745.21	26,414.06	272,765.18
	171	272,765.18	$28,159.27	$1,591.13	26,568.14	246,197.03
	172	246,197.03	$28,159.27	$1,436.15	26,723.12	219,473.91
	173	219,473.91	$28,159.27	$1,280.26	26,879.01	192,594.90
	174	192,594.90	$28,159.27	$1,123.47	27,035.80	165,559.09
	175	165,559.09	$28,159.27	$965.76	27,193.51	138,365.58
	176	138,365.58	$28,159.27	$807.13	27,352.14	111,013.44
	177	111,013.44	$28,159.27	$647.58	27,511.70	83,501.74
	178	83,501.74	$28,159.27	$487.09	27,672.18	55,829.56
	179	55,829.56	$28,159.27	$325.67	27,833.60	27,995.96
	180	27,995.96	$28,159.27	$163.31	27,995.96	(0.00)

Appendix II-F

Depreciation

Hard Costs:		
Residential Renovations		$1,500,000
Commercial Renovations		$1,050,000
Total Hard Costs		$2,550,000
Soft Costs:		
Architect and Engineering	$25,000	
Construction Interest and Carry	99,683	
Title, Recording, and Survey	5,875	
Real Estate Tax (under construction)	34,091	
Lender Financing Fee	31,329	
Legal	2,500	
Other	500	
Operating Reserve	1,000	
Marketing, Management and Leasing	3,409	
Total Soft Costs		$203,387
Total Depreciable Cost		$2,753,387

		Depreciation Period
Depreciation Schedule:		
Annual Depreciation	$70,600	39 years

Appendix II-G

Pro Forma Cash Flows

	Year 0
Acquisition Costs	$650,000
Hard Costs	$2,587,500
Soft Costs	$203,387
Total Construction Cash Outflow	$3,440,887
Less: Total Loan	$3,132,887
Total Equity Needed	$307,999

Appendix II-H

Net Operating Income

	Year 1	Year 2	Year 3	Year 4	Year 5
Income:					
Income (from leases)	$381,600	$612,000	$612,000	$612,000	$612,000
Storage Unit Income	11,448	18,360	18,360	18,360	18,360
Less Vacancy Factor	-19,080	-30,600	-30,600	-30,600	-30,600
Effective Gross Income	$373,968	$599,760	$599,760	$599,760	$599,760
Less Expenses:					
Management Expenses	19,080	30,600	30,600	30,600	30,600
Advertising/Marketing	7,500	7,500	7,500	7,500	7,500
Repair/Maintenance	25,000	25,000	25,000	25,000	25,000
Utilities/Ground	7,500	7,500	7,500	7,500	7,500
Insurance	9000	9000	9000	9000	9000
Other Expenses	5000	5000	5000	5000	5000
Replacement Reserves	10000	10000	10000	10000	10000
Real Estate Taxes	75000	75000	75000	75000	75000
Total Expenses	158,080	169,600	169,600	169,600	169,600
Net Operating Income	215,888	430,160	430,160	430,160	430,160
Net Operating Income	215,888	430,160	430,160	430,160	430,160
Less:					
Interest	215,422	206,567	197,072	186,891	175,974
Depreciation:	70,600	70,600	70,600	70,600	70,600
Taxable Income	(70,133)	152,993	162,488	172,670	183,587
Tax (@28%)	(19,637)	42,838	45,497	48,347	51,404

Appendix II-I

Sale of Project

	Before-Tax Cash Flow
Sale Price	$3,910,545
Less:	
Selling Expenses	195,527
Mortgage Balance	2,425,256
BTCF on the Sale	$1,289,763

	Gain in Year of Sale
Sales Price	$3,910,545
Less:	
Adjustable Basis	3,050,388
Total Capital Gain on Sale	$860,157

Total Gain on Sale	$860,157
Less Accumulated Depreciation	$352,998
Total Price Appreciation	$507,159

	After-Tax Cash Flow
BTCF on the Sale	$1,289,763
Less: Tax on Price Appreciation (20%)	101,432
Less: Tax on Acc. Dep. (25%)	88,250
ATCF on Sale	$1,188,331

Appendix II-J

Adjusted Basis on Sale

Item	Total Cost	Less Accumulated Depreciation	Adjusted Basis
Land and Buildings	$650,000	$0	$650,000
Improvements and Soft Costs	2,753,387	352,998	2,400,388
Total Adjustable Basis			$3,050,388

Appendix II-K

Summary Loan Information

Year	Payment	Interest (.11/12)	Amortization	Ending Loan Balance
1	$337,911.29	$215,421.74	$122,489.55	$3,010,397.45
2	$337,911.29	$206,566.96	131,344.33	2,879,053.12
3	$337,911.29	$197,072.07	140,839.22	2,738,213.90
4	$337,911.29	$186,890.79	151,020.50	2,587,193.39
5	$337,911.29	$175,973.50	161,937.79	2,425,255.61

Appendix II-L

Estimates of Before-Tax Cash Flows from Operations and Sale

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Cash Flow from Operations						
Net Operating Income		$215,888	$430,160	$430,160	$430,160	$430,160
Less Debt Service		337,911	337,911	337,911	337,911	337,911
Before Tax Cash Flow		-$122,023	$92,249	$92,249	$92,249	$92,249
Equity	-$307,999					
BTCF--Operations		-$122,023	$92,249	$92,249	$92,249	$92,249
BTCF--Sale						1,289,763
Total *BTCF*	-$307,999	-$122,023	$92,249	$92,249	$92,249	$1,382,011

Appendix II-M

Projected Cash Flows

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Total BTCF	($307,999)	($122,023)	$92,249	$92,249	$92,249	$1,382,011
Less:						
Ord. Tax		(19,637)	42,838	45,497	48,347	51,404
Tax On Sale						189,681
After-Tax Cash Flow	($307,999)	($102,386)	$49,411	$46,752	$43,901	$1,140,926

After-Tax IRR **28.95%**

Net Present Value **$375,721**

Appendix II-N

Scenario Analysis

Worst Case Scenario		**IRR**	**NPV**
Residential Rent per unit	$1,000	**-4.04%**	**-$199,181**
Commercial Lease per unit	$4,000		
Vacancy Factor	8%		

Most Likely Case Scenario		**IRR**	**NPV**
Residential Rent per unit	$1,100	**13.04%**	**$51,763**
Commercial Rent per unit	$4,300		
Vacancy Factor	6%		

Best Case Scenario		**IRR**	**NPV**
Residential Rent per unit	$1,200	**30.66%**	**$416,114**
Commercial Rent per unit	$4,600		
Vacancy Factor	4%		