Key Factors to Consider
When Analyzing Office Buildings

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Real Estate Valuation and Analysis
Course 767.785.81
Introduction

When appraising an office building it is first necessary to understand the local business climate and how it relates to the building’s competitive office market. Knowing which types of industries or businesses are in a particular area, as well as which ones are expanding or contracting, and the specific space needs and preferences for each (amount, type, price, preferred locations, etc.) are important factors to consider when analyzing office properties. Office buildings are generally categorized according to a few basic, sometimes overlapping characteristics, such as the following: A) Class; B) Location; C) Use; D) Size/Flexibility; E) Features/Amenities.

Class – A building’s “Class” is determined by a combination of factors such as a building’s age, quality of finishes, building systems, amenities, location, visibility (corner/mid-block), lease rates, tenant profile, etc. Class A buildings are generally the most desirable buildings in the marketplace (i.e., they have the best combination of the aforementioned factors) and garner the highest rental rates in the market. They also usually attract the best “credit” tenants in the market and the highest level of investors as well. In top-tier office markets such as Washington, DC, New York, Chicago, etc., the buildings at the top of the Class A market (i.e., the “best of the best”) are sometimes set apart from the rest of the Class A buildings and are referred to as “Trophy” properties. Class B buildings are generally either older buildings (formerly Class A buildings) that have not kept up with modern trends in design or features, or newer buildings that have some sort of drawback such as a mid-block orientation (limited views/visibility), unusually small or large floorplates, fewer amenities, etc. Class C buildings are generally the oldest buildings in the marketplace and often have some sort of functional deficiency such as low ceiling heights, insufficient heating/air-conditioning, inadequate elevator service (1 per 30,000-40,000 SF is typical), etc. It is important to realize that while the aforementioned factors are the primary determinants of a building’s Class, the whole concept of “Class” is also a function of how the market perceives a particular building within its overall market or submarket. As such, a building that is considered a Class A building in one market or submarket may be considered a Class B building in some other market/submarket. It is also worthy to note that opinions can also vary from person to person within the same market as it relates to the Class of a particular building(s).
“Trophy” or Top Tier Class A Office Building
1301 K Street, NW – Washington, DC

Class B Office Building
11 Dupont Circle, NW – Washington, DC

Class C Office Building
1126 16th Street, NW – Washington, DC
Location – The locations of office buildings are usually referred to as either CBD (Central Business District) or Suburban. In most cases, the CBD is the “prime” or “preferred” location and is usually characterized by high-density office buildings that achieve the highest rent levels in the marketplace. Typical tenants in CBD locations include law firms, accounting firms, consulting firms, and government tenants. Suburban locations are secondary office nodes that usually located near major transportation corridors, hospitals, universities, “destination” retail, or other business magnets. Some more mature suburban locations may have features of both CBD and Suburban markets (e.g., locations outside the urban core that have their own concentrated “downtown” office core). Some examples around the Washington, DC Metropolitan area include downtown Bethesda, MD, and areas of Arlington, VA.

Aerial View of the Rosslyn Submarket of Arlington, VA
(has features of both a suburban and CBD market)

Use – Office buildings can have a variety of tenant mixes and uses, such as single-tenant, multi-tenant, medical, flex, etc. Single-tenant buildings may be owned by the tenant, in which case it would be referred to as an owner/user building. A building constructed specifically for a single-tenant user is
often called a “build-to-suit”, whereas a building constructed with no specific tenants in mind is usually referred to as a “spec” (speculative) building. Single-tenant buildings or buildings where one tenant occupies an entire floor can generally make more efficient use of space, as they are able to use the entire floorplate, with the exception of restrooms and vertical penetrations (elevators/stairwells). Multi-tenant buildings on the other hand, are generally less efficient from a “usability” perspective, as some area is lost to corridors, elevator lobbies, common areas, etc. Some office buildings may be constructed for specific types of users such as medical tenants, or may be “flex buildings” and offer the ability to for some combination of office and warehouse/storage space.

Size – The size of office buildings is often measured both in terms of square footage and building height. Office buildings can range in size from a few thousand square feet to several million square feet, and building heights range from low-rise (1-3 stories), to mid-rise (4-15 stories), to high-rise (16 stories or more). However, in markets such as downtown Washington, DC which has a height restriction (140’ maximum), any building over roughly 8 stories would be considered a “high-rise”. Floorplate size and shape is also an important factor to consider when analyzing office buildings, particularly as more and more tenants are opting for open floorplans, which make more efficient use of space. In most cases, the ideal floorplate would be rectangular and contain around 20,000-3,000 SF, as this provides a very high ratio of offices in close proximity to window-lines (providing natural light and air) and a more limited amount of space in the “core” of the building. The following page shows a diagram of the floorplan of an ideally sized floorplate, and one that is much larger with lots of “dead space” around the core.
701 13th Street, NW – 68,000 SF Floorplate
(too large with a significant amount of “dead space” in the core)

700 11th Street, NW – 25,000 SF Floorplate
(perfect size with a high ratio of windowed offices and an efficient core)
Features/Amenities – Office buildings can have a wide range of features/amenities depending on the location. One of the most important features of an office building is the accessibility/proximity of transportation and/or parking. In urban locations, structured parking and access to public transportation (subway, bus, etc.) is very important. The relative importance of these features is often a function of the market and building Class. As an example, a high ratio of structured parking would be desirable for a Class A building wishing to attract law firm and consulting firm type tenants who would place a greater premium on the existence of on-site parking. On the other hand, a Class B/C building may place a greater emphasis on being located proximate to mass transit, as the cost of parking would not be as attractive to these types of tenants. For suburban office buildings, a greater emphasis is typically placed on the parking ratio (3-4 spaces per 1,000 SF), as most tenants tend to drive to work. Other factors such as high levels of architecture and quality of finishes in public areas/lobbies may be important to certain tenants such as law firms and high-profile corporate tenants. For high-tech tenants, electrical power and telecommunications capabilities would be of great importance. Many buildings also have amenities such as on-site health clubs and maintain locations proximate to restaurants and retail, which is important for a number of different tenant profiles. In all cases, an office building should have relatively good access to an employment base commensurate with the quality of the building. For Class A buildings, proximity to high-end executive housing is a necessity, whereas for a Class B/C building it is necessary to be proximate to fairly dense levels of middle-class residential development so that potential office users have a strong nearby labor force from which to draw.

Analysis of Market Area

When analyzing the market area of an office property, items such as the underlying economy, prospects for expansion, growth of office-using sectors of the economy, development climate, and availability and cost of labor are usually analyzed. It is also important to examine historical trends and statistics (both by building type and building class) factors such as vacancy rates, rental rates, and net absorption, as well as any space currently under construction or proposed in order to get an idea of the expected supply and demand levels for office space in the future. This analysis should be done on both a “macro” (entire market) basis, as well as on a more specific “micro” basis, in which the property’s specific submarket and directly competitive submarkets are analyzed.
A property’s “submarket” is generally the area in which the property competes directly with other properties. Typically, this is defined first on the basis of location, assuming there are an ample supply of comparables available. The more unique or specialized a particular property is, the broader the geographic range may be necessary to define a property’s competitive marketplace. As an example, for a super-regional shopping mall it may be necessary to include the entire MSA as being in the property’s competitive marketplace, whereas for a Class B office building it will likely be possible to isolate a much more specific location (e.g., CBD of downtown Washington, DC). The following chart contains a summary of some of the typical factors that are analyzed both on a “macro” (overall Washington, DC), as well as a more specific “micro” (submarket) basis for an office building in downtown Washington, DC.

<table>
<thead>
<tr>
<th>Submarket</th>
<th>Year-End 2004 Inventory (SF)</th>
<th>4Q '04</th>
<th>4Q '03</th>
<th>4Q '02</th>
<th>Vacancy Rate 1</th>
<th>Net Absorption (SF)</th>
<th>Class A Asking Rent 2</th>
<th>Class B Asking Rent 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Business District</td>
<td>35,556,769</td>
<td>7.3%</td>
<td>8.5%</td>
<td>9.0%</td>
<td>505,290</td>
<td>343,975</td>
<td>740,098</td>
<td>$41.81</td>
</tr>
<tr>
<td>East End</td>
<td>35,383,989</td>
<td>10.1%</td>
<td>9.4%</td>
<td>6.6%</td>
<td>887,160</td>
<td>110,092</td>
<td>740,419</td>
<td>$46.92</td>
</tr>
<tr>
<td>Southwest</td>
<td>11,339,110</td>
<td>5.7%</td>
<td>10.8%</td>
<td>9.6%</td>
<td>222,077</td>
<td>668,082</td>
<td>354,601</td>
<td>$38.97</td>
</tr>
<tr>
<td>Union Station</td>
<td>8,365,078</td>
<td>3.4%</td>
<td>3.9%</td>
<td>5.8%</td>
<td>188,006</td>
<td>491,387</td>
<td>616,975</td>
<td>$36.65</td>
</tr>
<tr>
<td>Uptown</td>
<td>7,236,980</td>
<td>4.4%</td>
<td>4.5%</td>
<td>5.1%</td>
<td>2,177</td>
<td>44,964</td>
<td>43,993</td>
<td>$35.71</td>
</tr>
<tr>
<td>West End</td>
<td>4,276,554</td>
<td>3.9%</td>
<td>9.0%</td>
<td>4.0%</td>
<td>161,951</td>
<td>218,329</td>
<td>95,735</td>
<td>$41.37</td>
</tr>
<tr>
<td>Georgetown</td>
<td>2,694,262</td>
<td>2.0%</td>
<td>4.3%</td>
<td>8.0%</td>
<td>51,383</td>
<td>122,256</td>
<td>22,507</td>
<td>n/a</td>
</tr>
<tr>
<td><strong>Total District of Columbia</strong></td>
<td>104,852,742</td>
<td>7.3%</td>
<td>8.4%</td>
<td>7.5%</td>
<td>2,018,046</td>
<td>1,562,467</td>
<td>99,460</td>
<td>$43.78</td>
</tr>
</tbody>
</table>

When analyzing a property's specific submarket, an appraiser should examine the unique characteristics of that submarket and its relationship to other nearby submarkets. Understanding the strengths and weaknesses of a submarket, as well as the economic drivers for the various submarkets is a critical determinate of the expected market trends (absorption, vacancy, rental rates, etc.) in a
particular area. As an example, the rapid run-up and subsequent decline in high-tech stocks from 1999-2002 had a dramatic impact on the office market in Northern Virginia due to the dense concentration of high-tech firms in the area. The following charts contain summaries of the value of the NASDAQ Composite Index over the last 10 years, as well as summary of the vacancy rates and net absorption in the various “outside the beltway” submarkets in Northern Virginia during the period from 1999-2002 (run-up and decline).

![NASDAQ COMPOSITE INDEX (1996-2005)](chart)

**Northern Virginia Office Market Survey**

<table>
<thead>
<tr>
<th>Outer Submarkets</th>
<th>4Q '02</th>
<th>4Q '01</th>
<th>4Q '00</th>
<th>4Q '99</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tysons Corner</td>
<td>22.3%</td>
<td>19.4%</td>
<td>3.7%</td>
<td>5.6%</td>
</tr>
<tr>
<td>Reston/Herndon</td>
<td>22.3%</td>
<td>19.4%</td>
<td>3.7%</td>
<td>5.6%</td>
</tr>
<tr>
<td>Route 50/66</td>
<td>15.1%</td>
<td>10.7%</td>
<td>2.4%</td>
<td>3.1%</td>
</tr>
<tr>
<td>Loudoun County</td>
<td>17.6%</td>
<td>16.0%</td>
<td>4.1%</td>
<td>5.7%</td>
</tr>
<tr>
<td>Route 28 South</td>
<td>17.2%</td>
<td>16.6%</td>
<td>9.4%</td>
<td>11.3%</td>
</tr>
<tr>
<td><strong>Outer Submarkets</strong></td>
<td>21.3%</td>
<td>16.8%</td>
<td>4.5%</td>
<td>5.8%</td>
</tr>
</tbody>
</table>

**Square Feet of Net Absorption (1999-2002)**

<table>
<thead>
<tr>
<th></th>
<th>4Q '02</th>
<th>4Q '01</th>
<th>4Q '00</th>
<th>4Q '99</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Northern Virginia</td>
<td>(28,000)</td>
<td>(4,039,000)</td>
<td>8,055,000</td>
<td>7,740,000</td>
</tr>
</tbody>
</table>

Source: Cassidy & Pinkard

As the chart shows, during 1999-2000 (the heyday of the high-tech market) nearly 16.0 million SF of space was absorbed in the “outside the beltway” submarkets in Northern Virginia, and the vacancy rates declined to levels of around 3-4% in the heart of the high-tech corridor (Reston/Herndon and Loudoun County). In contrast, during the market downturn of 2001-2002 negative net absorption
totaled nearly -4.1 million SF in 2001-2002, and vacancy rates ballooned to levels in excess of 20% by year-end 2002. The main point of the prior charts is that it is important to understand the various nuances of individual submarkets, as it can provide insight into the future prospects for a particular area. In addition, knowing what drives certain markets or submarkets helps an appraiser establish relationships between tenant preferences for various submarkets (i.e., why they gravitate to certain locations), which can help determine the true competitive area for a particular property.

Once the market area and competitive submarket(s) of a property are examined on an overall basis, it is necessary to narrow the competitive set of properties to individual buildings with specific characteristics that are deemed most similar to the subject (thus making them directly competitive properties). These are the buildings (or types of buildings) that the appraiser will attempt to gather information on as it relates to rental rates, recent sales, land sales, etc. which will be used in the three approaches to value (Income Capitalization, Sales Comparison, and Cost Approaches).

**Factors to Consider in the Income Capitalization Approach**

Now that a competitive set of properties has been identified for the subject, the appraiser must gather detailed rental information (typically from brokers active in the marketplace) on similar properties and examine the various factors that have an impact on rental rates. It is important to note that rental rates in the overall Washington, DC marketplace are typically quoted based on a $/SF of net rentable area (NRA). However, some tenants (such as GSA) utilize “usable” square footage rather than “rentable” square footage when quoting rental rates (the difference being that “usable” square footage excludes common areas such as lobbies, hallways, restrooms, etc.). When dealing with very small office buildings or small owner/user buildings, the primary basis for comparison may be $/SF-GBA (gross building area). Regardless of the unit of comparison, it is important to be consistent in the analysis. For purposes of this analysis, we will use net rentable area (NRA) as the basis for comparison, and assume that we are appraising a 10-15± year old Class A/Trophy quality office building in the CBD of Washington, DC, as it allows for a more detailed discussion of the pertinent factors affecting rental rates. The following page contains a typical write-up for a rental comparable in downtown Washington, DC. Following the rental write-up is a summary chart containing several recent leases in directly competitive buildings in the East End submarket of downtown Washington, DC.
Rental Comparable Write-up

Location:
The Homer Building
601 13th Street, NW
Washington, DC
Submarket: East End

Description:
Year Built: 1914 (original); 1990 (gut renovation)
Size: 422,104 SF
# Stories/Floorplates: 12 stories/29,000-38,000± SF floorplates
Parking: 0.94 spaces per 1,000 SF (398 spaces)
Occupancy: 97%

Leasing Information:
A) Tenant: ABC Insurance Company
Amount Leased: 1,910 SF (5th Floor)
Lease Date: May 2004 (Commencement)
Term: 5 years
Rent/SF: $46.00/SF-FS
Annual Escalations: 2.50% annually
Expenses: Full Service (2004 Base Year)
Concessions:
  Free Rent: 2 Months
  Workletter: $20.00/SF (Relet)
B) Tenant: XYZ Consulting Firm
   Amount Leased: 3,532 SF (5th Floor)
   Lease Date: April 2004 (Commencement)
   Term: 10 years
   Rent/SF: $46.75/SF-FS
   Annual Escalations: 2.25% annually, with $1.75/SF bump in year 6 (in lieu of esc.)
   Expenses: Full Service (2004 Base Year)
   Concessions:
   Free Rent: None
   Workletter: $45.00/SF (Relet)

C) Tenant: Acme Accounting Co.
   Amount Leased: 2,009 SF (5th Floor)
   Lease Date: April 2004 (Commencement)
   Term: 6 years, 7 months (Expansion)
   Rent/SF: $50.18/SF-FS
   Annual Escalations: 2.25% annually, with $2.00/SF bump in year middle of 3rd lease year (coincides with lease bump in original lease)
   Expenses: Full Service (2004 Base Year)
   Concessions:
   Free Rent: None
   Workletter: $25.00/SF (Relet/Expansion)

D) Tenant: French & Company
   Amount Leased: 2,572 (3rd Floor)
   Lease Date: April 2004 (Commencement)
   Term: 4 years, 6 months
   Rent/SF: $46.75/SF-FS
   Annual Escalations: 2.5% annually
   Expenses: Full Service
   Concessions:
   Free Rent: None
   Workletter: Paint & Carpet (Renewal)

G) Tenant: TK Holdings
   Amount Leased: 1,963 SF (3rd Floor)
   Lease Date: December 2003 (Signing); January 2005 (Commencement)
   Term: 5 years
   Rent/SF: $51.35/SF-FS
   Annual Escalations: 3.0% annually
   Expenses: Full Service (2005 Base Year)
   Concessions:
   Free Rent: None
   Workletter: $7.00/SF (Renewal)
Comments:

This property is a 12-story “trophy” quality office building with an historic 1914 façade that was “gut renovated” in 1990, effectively rendering a brand new building. The building contains a total net rentable area of 422,104 SF (excluding below grade storage space and management/engineer’s office). The building is located on a 43,243 SF site on the east side of 13th Street between F and G Streets, NW in the “heart” of the East End. The Metro Center (Orange, Blue, and Red Lines) Metrorail Station is located directly beneath the property. The property is 97% occupied as of the issuance of this report.

The exterior of the property consists of a mix of brick, polished granite, and ornamental masonry work (historic 1914 façade) that was preserved in the 1990 “gut renovation”. Windows are low-e reflective glass set in anodized aluminum frames. The lobby has a classically designed 12-story atrium with glass roof, along with elegant marble and brass finishes, making it one of the most striking lobbies in Washington, DC. Entrance doors are polished brass, with a revolving door at the main entrance fronting on 13th Street.

Building amenities include two landscaped roof-top terraces with excellent views of downtown Washington, DC the National Mall, and the Monuments. In addition, there is an on-site athletic facility featuring a weight room, racquetball courts, and a sauna.

Verification:

Rent roll and leases provided by ownership, 5/04.
## OFFICE RENTAL COMPARABLE SUMMARY

<table>
<thead>
<tr>
<th>Rental</th>
<th>Address</th>
<th>Size (SF)</th>
<th>Year Built</th>
<th>* Rent ($/SF-NNN)</th>
<th>* Rent ($/SF-FS)</th>
<th>Lease Date</th>
<th>Term</th>
<th>Annual Escalations</th>
<th>Term Length</th>
<th>TIP ($/SF)</th>
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<tbody>
<tr>
<td>IA</td>
<td>601 13th St., NW</td>
<td>1,910</td>
<td>1914/90</td>
<td>N/A</td>
<td>$45.00</td>
<td>May-04</td>
<td>5 yrs.</td>
<td>2.50%</td>
<td></td>
<td>$20.00</td>
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<tr>
<td>IB</td>
<td>601 13th St., NW</td>
<td>3,532</td>
<td>1914/90</td>
<td>N/A</td>
<td>$46.75</td>
<td>Apr-04</td>
<td>10 yrs.</td>
<td>2.25%, w/1.75 bump y. 6</td>
<td></td>
<td>$45.00</td>
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<td>IC</td>
<td>601 13th St., NW</td>
<td>2,009</td>
<td>1914/90</td>
<td>N/A</td>
<td>$50.18</td>
<td>Apr-04</td>
<td>6.5 yrs.</td>
<td>2.25%, w/2.00 bump y. 3</td>
<td></td>
<td>$25.00</td>
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<td>ID</td>
<td>601 13th St., NW</td>
<td>1,603</td>
<td>1914/90</td>
<td>N/A</td>
<td>$51.35</td>
<td>Dec-03</td>
<td>5 yrs.</td>
<td>3.00%</td>
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<td>$7.00</td>
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<td>IE</td>
<td>1301 13th St., NW</td>
<td>11,000</td>
<td>2003</td>
<td>$30.30</td>
<td>$46.30</td>
<td>Apr-04</td>
<td>15 yrs.</td>
<td>2.00%</td>
<td></td>
<td>$85.00</td>
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<td>IF</td>
<td>1301 13th St., NW</td>
<td>25,427</td>
<td>2003</td>
<td>$30.50</td>
<td>$46.50</td>
<td>Mar-04</td>
<td>15 yrs.</td>
<td>2.25%</td>
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<td>$60.00</td>
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<td>IG</td>
<td>1301 13th St., NW</td>
<td>25,751</td>
<td>1989</td>
<td>N/A</td>
<td>$42.00</td>
<td>Apr-04</td>
<td>5 yrs.</td>
<td>2.50%</td>
<td></td>
<td>$17.50</td>
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<td>III</td>
<td>1301 13th St., NW</td>
<td>2,280</td>
<td>1989</td>
<td>N/A</td>
<td>$43.00</td>
<td>Apr-04</td>
<td>5 yrs.</td>
<td>2.50%</td>
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<td>$15.00</td>
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<td>IV</td>
<td>1401 H St., NW</td>
<td>15,752</td>
<td>1992</td>
<td>$33.00</td>
<td>$49.00</td>
<td>Mar-04</td>
<td>10 yrs.</td>
<td>2.50%</td>
<td></td>
<td>$7.00</td>
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<tr>
<td>VA</td>
<td>1300 Eye St., NW</td>
<td>42,931</td>
<td>1989</td>
<td>N/A</td>
<td>$51.00</td>
<td>Feb-04</td>
<td>10 yrs.</td>
<td>2.5%, w/2.50 bump y. 6</td>
<td></td>
<td>$50.00</td>
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<tr>
<td>VB</td>
<td>1300 Eye St., NW</td>
<td>33,000</td>
<td>1989</td>
<td>$36.00</td>
<td>$52.00</td>
<td>Dec-03</td>
<td>10 yrs.</td>
<td>2.50%</td>
<td></td>
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<tr>
<td>VC</td>
<td>1300 Eye St., NW</td>
<td>655</td>
<td>1983</td>
<td>N/A</td>
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<td>Oct-03</td>
<td>10 yrs.</td>
<td>2.25%, w/2.50 bump y. 6</td>
<td></td>
<td>$40.00</td>
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<td>VD</td>
<td>1300 Eye St., NW</td>
<td>600</td>
<td>1999</td>
<td>N/A</td>
<td>$50.50</td>
<td>Dec-03</td>
<td>10 yrs.</td>
<td>3.0%, w/2.50 bump y. 6</td>
<td></td>
<td>$38.00</td>
</tr>
<tr>
<td>VE</td>
<td>1300 Eye St., NW</td>
<td>700</td>
<td>1991</td>
<td>N/A</td>
<td>$42.00</td>
<td>Nov-03</td>
<td>5 yrs.</td>
<td>2.00%</td>
<td></td>
<td>$7.00</td>
</tr>
<tr>
<td>VF</td>
<td>1300 Eye St., NW</td>
<td>950</td>
<td>2005</td>
<td>$40.00</td>
<td>$56.00</td>
<td>Nov-03</td>
<td>15 yrs.</td>
<td>2.25%, w/2.50 bump y. 6 &amp; 11</td>
<td>$60.00 (new lease)</td>
<td>$35.00</td>
</tr>
<tr>
<td>VG</td>
<td>1300 Eye St., NW</td>
<td>1000</td>
<td>1989</td>
<td>N/A</td>
<td>$43.50</td>
<td>Jun-03</td>
<td>10 yrs.</td>
<td>2.50%</td>
<td></td>
<td>$35.00</td>
</tr>
<tr>
<td>VI</td>
<td>1300 Eye St., NW</td>
<td>260,000</td>
<td>1987</td>
<td>$33.48</td>
<td>$49.48</td>
<td>Jan-03</td>
<td>10 yrs.</td>
<td>N/A</td>
<td></td>
<td>$35.00</td>
</tr>
<tr>
<td>Average Rental Rate</td>
<td></td>
<td></td>
<td></td>
<td>$34.25</td>
<td>$47.83</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* All rental rates have been converted to a full-service (FS) equivalent.
Source: RCDII & Co.

### Expense Structure

As the prior chart indicates, the leases exhibit expense structures ranging from triple-net (NNN) to full service (FS). Assuming the subject property has a full-service expense structure, it would be necessary to equate the rental rates at the comparables with triple-net expense structures to a full-service equivalent so that an “apples to apples” comparison can be made between the various rentals. This adjustment is made based on the typical operating expenses for a similar quality building in the marketplace (estimated through market research), unless actual expense levels can be verified for a particular building. It is also very important to model the expense structures in place at the subject property correctly in the cash flow, making sure tenants reimburse the landlord for operating expenses above base year amounts.

After the adjustment for expenses is made, the rental comparables exhibit rental rates (on a full service basis) ranging from $42.00/SF-FS to $56.00/SF-FS, with an average of around $47.83/SF-FS. It should be noted that, for the most part, the rentals at the upper end of the range (low- to mid-$50’s/SF-FS) are for either newly constructed buildings (1st generation space) or for “trophy” quality buildings. The buildings with rental rates at the lower end of the range low- to mid-$40’s/SF-FS) are for late 1980’s/early 1990’s vintage “Class A” buildings (not quite “trophy” quality).

### Lease Terms

The rental comparables exhibit lease terms ranging from 5 years to 15 years, with a relatively equal number of short term (5± years) and long term (10± years) leases. An appraiser should
attempt to recognize certain “trends” as it relates to the term of a lease based on factors such as the age of the building, size of the tenants, overall market conditions, vacancy rates, etc. In the case of downtown Washington, DC, it is not uncommon for larger tenants to sign long-term (10 years or greater) leases due simply to the hassle associated with moving such a large company (not to mention a lack of available space options), whereas smaller tenants often sign shorter (5± years) leases. In addition, new “first generation” tenants in brand new buildings tend to sign longer-term leases than for tenants in existing buildings (“second generation” spaces). Once again, this is a function of the individual market and market conditions, and the appraiser should tailor the lease terms used in his/her analysis to the characteristics of the subject property. For the purposes of this analysis, we will assume that the building has a fairly equal number of large and spaces, so a lease term of 7± years will be utilized (designed to simulate a mix of short and long term leases).

Rent Escalations – The rental escalations range from fixed “bumps” at specified points in the lease to annual percentage increases. In fact, several of the rental comparables have a fixed “bump” of $2.00-$3.00/SF at specified points in the leases in addition to annual percentage escalations. The amount of rental escalations is a function of the market and different markets (and property types for that matter) will typically have varying types of rental escalations. In the downtown Washington, DC market, those leases that have fixed bumps in addition to annual escalations are typically for long term (10 years or greater) deals, whereas most short term (5± years) leases typically have only an annual escalation of 2-3% each year (no bump).

Tenant Improvement Allowances – The tenant improvement allowances on the rental comparables exhibited a wide range from “As Is” (none) to $85.00/SF. There are a number of reasons for such a wide range of TI’s such as length of the lease, size of the tenant, age of the building, etc., which need to be appropriately taken into consideration by the appraiser. The tenant improvement allowances for “first generation” spaces ranged from $60.00/SF to $85.00/SF. The “second generation” spaces exhibited a wide range from “As Is” (none) to $50.00/SF. The difference between “first generation” and “second generation” TI’s is due to the fact that some items in “second generation” spaces can be reused from tenant to tenant (e.g., lights, some doors, some walls, ceilings, HVAC, etc.), whereas “first generation” spaces have to be built out from a “shell”, which explains the higher cost (typically $15/SF in downtown Washington, DC).
The “second generation” leases with TI’s at the upper end of the range are generally for relet (new) tenants who signed leases with longer terms (10± years), whereas when existing tenants either renewed their leases or expanded into adjacent spaces, tenant improvement allowances of slightly lower levels are common. This is due to the fact that when a tenant renews, there is typically much less work associated with moving walls, offices, etc. than for new (relet) tenants.

Due to the difficulty in comparing leases with different terms, TI levels, and renewal/relet leases to one another, it is sometimes useful to break down TI levels on an annualized basis to determine an appropriate relationship. The following chart contains a summary of the annual TI levels for the various leases presented in the prior chart. For purposes of the analysis, the leases are color coded by the type of lease (new, relet, renewal).

<table>
<thead>
<tr>
<th>Rental</th>
<th>Lease Type</th>
<th>TIs ($)SF</th>
<th>Lease Term</th>
<th>TIs ($)SF/Year</th>
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<tbody>
<tr>
<td>1A</td>
<td>2nd Gen - Relet</td>
<td>$20.00</td>
<td>5</td>
<td>$4.00</td>
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<tr>
<td>1B</td>
<td>2nd Gen - Relet</td>
<td>$45.00</td>
<td>10</td>
<td>$4.50</td>
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<tr>
<td>1C</td>
<td>2nd Gen - Relet/Exp</td>
<td>$25.00</td>
<td>6.5</td>
<td>$3.85</td>
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<tr>
<td>1D</td>
<td>2nd Gen - Rellet</td>
<td>$20.00</td>
<td>5</td>
<td>$4.00</td>
</tr>
<tr>
<td>2A</td>
<td>1st Gen - New</td>
<td>$85.00</td>
<td>10</td>
<td>$8.50</td>
</tr>
<tr>
<td>2B</td>
<td>1st Gen - New</td>
<td>$60.00</td>
<td>15</td>
<td>$4.00</td>
</tr>
<tr>
<td>3A</td>
<td>2nd Gen - Renewal</td>
<td>$17.50</td>
<td>5</td>
<td>$3.50</td>
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<tr>
<td>3B</td>
<td>2nd Gen - Renewal</td>
<td>$18.00</td>
<td>5</td>
<td>$3.60</td>
</tr>
<tr>
<td>4</td>
<td>2nd Gen - Renewal</td>
<td>$18.00</td>
<td>10</td>
<td>$1.80</td>
</tr>
<tr>
<td>5A</td>
<td>2nd Gen - Rellet</td>
<td>$50.00</td>
<td>10</td>
<td>$5.00</td>
</tr>
<tr>
<td>5B</td>
<td>2nd Gen - Rellet</td>
<td>$50.00</td>
<td>10</td>
<td>$5.00</td>
</tr>
<tr>
<td>6</td>
<td>2nd Gen - Renewal</td>
<td>$30.00</td>
<td>10</td>
<td>$3.00</td>
</tr>
<tr>
<td>7</td>
<td>2nd Gen - Renewal</td>
<td>$38.00</td>
<td>10</td>
<td>$3.80</td>
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<tr>
<td>8</td>
<td>2nd Gen - Sublet</td>
<td>$7.00</td>
<td>5</td>
<td>$1.40</td>
</tr>
<tr>
<td>9</td>
<td>1st Gen - New</td>
<td>$60.00</td>
<td>15</td>
<td>$4.00</td>
</tr>
<tr>
<td>10</td>
<td>2nd Gen - Rellet</td>
<td>$35.00</td>
<td>10</td>
<td>$3.50</td>
</tr>
<tr>
<td>11</td>
<td>2nd Gen - Renewal</td>
<td>$20.00</td>
<td>10</td>
<td>$2.00</td>
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<table>
<thead>
<tr>
<th>Lease Type</th>
<th>TIs/Year (Range)</th>
<th>TIs/Year (Avg.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Gen - New Range/Average</td>
<td>$4.00-$4.50</td>
<td>$4.25</td>
</tr>
<tr>
<td>2nd Gen - Rellet Range/Average</td>
<td>$3.50-$5.00</td>
<td>$4.31</td>
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<tr>
<td>2nd Gen - Renewal Range/Average</td>
<td>$2.50-$3.00</td>
<td>$2.84</td>
</tr>
</tbody>
</table>

Since the subject has already been leased on a “first generation” basis, only “second generation” TI’s need to be estimated for the cash flow model. Based on the information in the prior chart, it would be prudent to assume that new “second generation” tenants (relet space) will receive tenant improvement allowances of around $4.00-$4.50/SF annually, which would equate to around $30.00±/SF based on the 7-year lease term, whereas renewal tenants would receive a tenant improvement allowance of around $2.50-$3.00/SF annually, which would equate to around $20.00±/SF. When comparing the
rent comparables to the subject in an adjustment grid, the TI levels can be broken down on an annualized basis and adjusted as needed, so that comparables with significantly “above market” or “below market” TI levels can be adjusted to a “typical” range of around $2.50-$4.50/SF/year. The reason for this adjustment is that any above-standard or below-standard TI’s are typically taken into account into the rental rate in the form of higher or lower rent. Although landlords typically apply some sort of amortization to TI levels (e.g., 10%/±/year), this simple unamortized calculation is sufficient for the adjustment process.

Once again, it is important to note that the example utilized here applies to the downtown Washington, DC office market as of mid-2004. Every market will be different in terms of the level of TI’s for various types of spaces. Nevertheless, this provides an easy way to adjust comparables to one another when examining TI’s. It is also worth pointing out that some appraisers prefer to completely eliminate (deduct) the annualized TI figures in order to derive an “effective” (net of TI’s) rent level and then “add back” the TI’s at the end when concluding to an appropriate rental rate. However, I personally prefer to adjust the comparables to an appropriate range of “typical” TI’s so that there is no need for an “add back”.

Typical Adjustment Factors – Some of the remaining items to take into consideration when comparing rental comparables to the subject (typically via an adjustment grid) are as follows:

* **Market Conditions** – Used to account for changes in the market (increases or decreases in rental rates) over time;
* **Location** – Used to account for differences in locational attributes such as proximity to major roadways or other desirable (or undesirable) uses;
* **Age/Condition** – This factor accounts for differences in rental rates that are a result of the age/condition of a property. Although a property’s actual age is an important factor to take into consideration, an appraiser should realize that a property’s actual age is not necessarily an indication of its effective age, which is how the market perceives or “ranks” a property in terms of its overall condition and utility. A property’s effective age is a function of the overall quality of building construction and materials, as well as of the maintenance standards of ownership. As a result, even in the same market, buildings do not necessarily
depreciate at the same rate. As such, an appraiser should rely on his/her experience, as well as depreciation schedules found in cost manuals such as *Marshall & Swift*.

* **Physical Attributes** – This adjustment category can be used to account for a variety of factors. Some of the more typical items would be differences in overall building size, number of stories, a tenant’s location within the building (e.g., ground floor vs. top floor), quality of construction, size/shape of floorplates, on-site amenities, parking ratio, etc. For properties located in CBD areas, a key attribute to take into account is a “corner” vs. “mid-block” orientation. Mid-block properties are generally inferior in comparison to those with corner locations, as they have inferior visibility from roadways, as well as fewer windowed offices with views (translates to lower rental rates). This adjustment can be accounted for in the location category, but I typically include it in physical attributes (doesn’t really matter as long as you explain it and analyze comparables consistently);

* **Lease Terms/Conditions** – This adjustment is used to account for any unusual circumstances with respect to the terms or conditions of the lease. Examples could include unusually long or short lease terms or above or below market rental escalations, which make the initial “face” or “base” rental rate higher or lower than the “norm”.

* **Tenancy/Size** – This category is used to account for any factors relating to the credit of the tenant or size of the tenant, which may have affected the rental rate. As an example, tenants with very good credit can often negotiate lower rental rates. In addition, extremely large tenants have historically received slightly discounted rental rates for leasing such large blocks of space, whereas extremely small tenants were often forced to pay a slight premium. However, over the past several years in downtown Washington, DC there has been a shortage of extremely large (100,000+ SF) “blocks” of Class A/trophy office space. As such, extremely large users have actually been forced to pay slight “premiums” due to a lack of available space options. An appraiser must be aware of current market conditions and make adjustments accordingly.

It is important to note that for some of the rental comparables there are multiple lease transactions in the write-ups. For purposes of the adjustment process, I would typically only analyze the most comparable lease at each property (usually the most recent or maybe ones with space sizes most analogous to those at the subject) and make the necessary adjustments in the adjustment grid. It should be noted that the
individual leases at the same property will, for the most part, undergo the same basic adjustments and, therefore, garner the same net adjusted rental rate as the other leases at that property.

**Conclusion of Rental Rate** – Once the appraiser has analyzed and adjusted the rental comparables, it is necessary to conclude to an appropriate rental rate. This is fairly straight-forward once the adjustment grid and analysis is completed, but it should be noted that in some cases it may be necessary to “price point” rents based on location within the building (views or window-lines) or by floor. In high-rise properties, those tenants on upper floors will generally pay higher rental rates due to better views, decreased street noise, and the added prestige of having space on upper floors.

**Other Income** – In addition to ordinary rental income, the subject may receive additional income from other sources such as roof-top antennas, vending machines, interest, parking, storage space, etc. This additional income will usually be fairly minimal for suburban buildings or small buildings, but can be quite significant for larger buildings in urban areas. In any case, the other income sources should be analyzed and quantified appropriately. This is particularly the case with respect to parking revenues, which are often grossly underestimated for buildings in downtown Washington, DC. While a review of historical income is pertinent, it may not be an accurate indication of future parking revenues, particularly if there is a below-market operating agreement or parking garage lease in place.

**Vacancy/Collection Loss** – Once an estimate of the potential gross income for a property is derived, it is necessary to estimate vacancy/collection loss. This will be a function of the overall vacancy rates in the marketplace, as well as the subject property’s specific tenancy (remaining lease terms, credit nature of tenants, existence of above or below market renewal options, etc.).

**Operating Expenses** – When appraising an office building, the subject’s historical operating expenses and budget are typically the most useful in projecting operating expenses moving forward. However, it is also pertinent to gather and examine the operating statements and budgets for similar buildings in the marketplace (“expense comps”) as a test for reasonableness. (These are usually examined on a $/SF basis). Some of the following are the more “typical” operating expense categories for office buildings: A) real estate taxes; B) insurance; C) utilities (gas, electric, water/sewer); D) cleaning/janitorial; E)
contact services (elevators, landscaping, security); F) repairs & maintenance; G) management fees; H) administrative; etc.

It is also worth noting that when comparing “expense comps” to one another and your subject property, there are often variances from property to property for individual operating expense categories. As such, it is sometimes difficult to compare operating expenses strictly on a “category by category” basis, so it is often more useful to examine operating expense on a “global” basis due to unique methods of accounting at individual office buildings. As an example, office buildings may account for all salaries in a separate “payroll” expense category, while another complex may place the various salary expenses in the category in which the expense is incurred (e.g., administrative, maintenance, etc.). As such, while it is important that the operating expenses for each of the individual expense categories be reasonably consistent with the comparables, it is also important that the total operating expense levels (as a whole) be reasonable.

Non-Operating Expenses (Leasing Commissions and Tenant Improvements) – After the operating expenses are deducted from the effective gross income (potential gross income, less vacancy/collection loss), the result is net operating income (NOI). However, there are some expenses that are commonly called “non-operating expenses” that must be taken into account at this point. These items typically include leasing commission and tenant improvements. These expenses are paid as leases are signed. It is also common to provide a replacement reserve allowance at this time as well, which is money that must be set aside for future replacement of short lived items such as HVAC, roofs parking lots etc. For a building in downtown Washington, DC an appropriate replacement reserve allowance would generally be $0.25-$0.30/SF-NRA or 1%-6 of EGR. This figure will vary depending on the age/condition of the building and maintenance standards of ownership.

Capitalization Process – Now that the income and expenses for a property have been analyzed, it is necessary to capitalize these projections into an estimate of value. In developing the Income Capitalization Approach, two capitalization techniques are typically considered. The first technique is direct capitalization, in which a stabilized income and expense statement for the subject property is estimated and the resulting net operating income is capitalized at an appropriate overall rate. The second technique is a discounted cash flow analysis, which is completed by analyzing income and expense trends over a projected investment holding period. The anticipated cash flows and hypothecated sale at
reversion (end of holding period) are discounted to a net present value using a yield rate/internal rate of return considered appropriate for the subject property.

For stabilized properties with net operating income and cash flow streams that are anticipated to be consistent for the short to intermediate term future, direct capitalization analysis is the often considered the most appropriate valuation technique. It is also usually a more preferred technique when analyzing smaller properties that would not be considered "investment grade". Discounted cash flow analysis is usually the most appropriate valuation technique when analyzing unstabilized properties where lost income from downtime and costs associated with re-leasing the property (IT's, leasing commissions, etc.) must be taken into account. In addition, a discounted cash flow is often preferred for properties where contract rental rates are substantially different from market rental rates, as this process takes into consideration the full range of lease data, which are specific to tenant spaces during an assumed holding period. Discounted cash flow analysis is also typically utilized for larger "investment grade" properties. Whichever method is most appropriate will be a function of the particular building being appraised.

"Going-In" Capitalization Rates (Direct Cap) - Establishing an appropriate "going-in" capitalization rate for a property for purposes of direct capitalization can be accomplished in a variety of ways depending on the quantity and quality of data available. Three common methods of deriving an appropriate capitalization are as follows: 1) abstraction of data from a prominent national investor survey, such as Real Estate Research Corporation (RERC) or Korpacz; 2) utilization of the Band of Investment technique, using mortgage and equity components; and 3) analysis of capitalization rates collected from recent sales of similar quality properties in the area. Surveys and the Band of Investment technique are usually utilized when only a limited amount of data is available or for smaller properties. The preferred technique is by using the capitalization rates from recent sales, but it is often difficult to obtain detailed information on comparable sales (must be verified from parties involved in the sale or other reliable third parties).

Yield Rates (Discounted Cash Flow) - Similar to capitalization rates, three principal methods of deriving yield rates are typically utilized in the marketplace: 1) sales data (through verification/abstraction); 2) investor surveys; and 3) the band of investment or built-up method (i.e., abstraction based upon competitive investment opportunities and financing rates, with a weighted average rate of return being derived based on mortgage constant and equity rates at appropriate
leverage proportions). As was the case with "going-in" cap rates, the preferred method of deriving yield rates is from recent sale transactions, but this figure is often difficult to obtain and is typically very closely guarded by market participants.

**Terminal Cap Rates (Discounted Cash Flow)** – Terminal cap rates are usually derived from investor surveys or from sales data (verification/abstraction). However, oftentimes this data is also difficult to obtain. Nevertheless, it is worth noting that although terminal cap rates may not be available for many sales, terminal cap rates are typically around 50± basis points higher than "going-in" cap rates due to the fact that the property is older, as well as the fact that there is more uncertainty about market conditions at the time of reversion (10± years out). Although this is just a “rule of thumb” it is typically fairly accurate and this 50± basis point gap is consistent with investor surveys as well.

**Analyzing Sales for Cap and Yield Rate Data** – There are a few “pitfalls” for an appraiser to be aware of when abstracting capitalization and yield rate data from sales. As noted previously, cap/yield requirements are very sensitive to above-market or below-market leases, as well as the rollover schedules at the various sales. Listed in the following charts is an example of how the “going-in” cap rate and market value of the property is affected by a flat lease (no escalations) vs. one with annual escalations of 3.0%. All other factors such as yield rate, terminal cap rate, reversion value, etc. are the same. For this example, it is assumed that the lease expires after year 9 and that the $0.00 indicated in year 10 is to account for downtime during lease-up and costs for TI’s and commissions. As the chart indicates, the “going-in” cap rate for the flat lease is 7.50%, whereas the cap rate for the lease with annual escalations is 7.15%. As such, it is important for an appraiser to verify the facts as it relates to the future income expected at the property (i.e., contract lease terms/conditions) in order to estimate an appropriate “going-in” cap rate for the property being appraised.
<table>
<thead>
<tr>
<th>Year of Cash Flow</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
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<tbody>
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<td>$0.00</td>
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<td>Indicated &quot;Going-In&quot; Cap Rate</td>
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<table>
<thead>
<tr>
<th>Year of Cash Flow</th>
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<th>3</th>
<th>4</th>
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<tbody>
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<td>Net Cash Flow (Years 1-10)</td>
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<tr>
<td>Present Value of Reversion (9.25% Yield Rate)</td>
<td>$240.43</td>
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</table>

Note: All values based on S/SP-NRA.

As an example of how the "going-in" cap rate can be affected by the remaining lease term, the following chart shows a summary of this calculation comparing a short-term lease (2 years remaining) vs. a long-term lease (10+ years remaining). In the short-term scenario, it is assumed that the lease expires after year 2 and that the $0.00 indicated in year 3 is to account for downtime during lease-up and costs for TI’s and commissions. As the chart indicates, the "going-in" cap rate in the long-term scenario is 6.89% vs. 7.30% in the short-term scenario.
As an example of how “going-in” cap rates and yield rates can be affected by above-market or below-market leases, the following page contains a chart showing the differences in cap rates and yield rates. All other factors such as terminal cap rate, reversion value, total market value, etc. are the same. It is assumed that the lease expires after year 5 and that the $0.00 indicated in year 6 is to account for downtime during lease-up and costs for TI's and commissions. As the chart indicates, while the overall present value estimate and reversion value remain constant, the “going-in” cap rates range from 6.47% in the below-market scenario to 8.82% in the above-market scenario, whereas the yield rates range from 9.39% to 10.76%. The chart on the following page contains one more example of how the “going-in” cap rate
### ABOVE-MARKET VS. BELOW-MARKET RENTAL RATES

**MARKET-ORIENTED Rental Rate (3.0% Escalations, 5 Years Remaining on Lease)**

<table>
<thead>
<tr>
<th>Year of Cash Flow</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Cash Flow (Years 1-10)</td>
<td>$32.50</td>
<td>$33.48</td>
<td>$34.48</td>
<td>$35.51</td>
<td>$36.58</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$42.41</td>
</tr>
<tr>
<td>Reversion (Based on Yr. 11 NOI @ 7.5% Terminal Cap)</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$582.36</td>
</tr>
<tr>
<td>Present Value of Cash Flow</td>
<td>$201.92</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Present Value of Reversion</td>
<td>$223.31</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Total Present Value Estimate</td>
<td>$445.23</td>
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</tr>
<tr>
<td>Indicated &quot;Going-In&quot; Cap Rate (Ro)</td>
<td>7.64%</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Implied Yield Rate (Yo)</td>
<td>10.05%</td>
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</tr>
</tbody>
</table>

**ABOVE-MARKET Rental Rate (3.0% Escalations, 5 Years Remaining on Lease)**

<table>
<thead>
<tr>
<th>Year of Cash Flow</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Cash Flow (Years 1-10)</td>
<td>$37.50</td>
<td>$38.63</td>
<td>$39.78</td>
<td>$40.98</td>
<td>$42.21</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$42.41</td>
</tr>
<tr>
<td>Reversion (Based on Yr. 11 NOI @ 7.5% Terminal Cap)</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$582.36</td>
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<tr>
<td>Present Value of Cash Flow</td>
<td>$215.47</td>
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<tr>
<td>Present Value of Reversion</td>
<td>$209.59</td>
<td></td>
<td></td>
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<tr>
<td>Total Present Value Estimate</td>
<td>$425.05</td>
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<tr>
<td>Indicated &quot;Going-In&quot; Cap Rate (Ro)</td>
<td>8.82%</td>
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</tr>
<tr>
<td>Implied Yield Rate (Yo)</td>
<td>10.76%</td>
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</tr>
</tbody>
</table>

**BELOW-MARKET Rental Rate (3.0% Escalations, 5 Years Remaining on Lease)**

<table>
<thead>
<tr>
<th>Year of Cash Flow</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Cash Flow (Years 1-10)</td>
<td>$27.50</td>
<td>$28.33</td>
<td>$29.17</td>
<td>$30.05</td>
<td>$30.95</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$42.41</td>
</tr>
<tr>
<td>Reversion (Based on Yr. 11 NOI @ 7.5% Terminal Cap)</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$582.36</td>
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<tr>
<td>Present Value of Cash Flow</td>
<td>$187.68</td>
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<tr>
<td>Present Value of Reversion</td>
<td>$237.37</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Total Present Value Estimate</td>
<td>$425.05</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indicated &quot;Going-In&quot; Cap Rate (Ro)</td>
<td>6.47%</td>
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</tr>
<tr>
<td>Implied Yield Rate (Yo)</td>
<td>9.39%</td>
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</tbody>
</table>

**Note:** All values based on S/SF-NRA.

The primary purpose of the previous examples is to show the appraiser that when using sales comparables to derive cap and yield rate requirements, it is necessary for the appraiser to verify the details relating to the rent roll, lease terms, etc., as it can have a significant impact on capitalization and yield rate requirements, as well as overall pricing levels. Understanding the cash flow stream at an income-producing property is vital since many purchasers (particularly for larger "investment grade" properties), are analyzing properties almost strictly on their income-producing capabilities.
Factors to Consider in the Sales Comparison Approach

In the Sales Comparison Approach, a search for recent sales involving properties with characteristics similar to the subject must be undertaken (similar to the search for rentals in the Income Capitalization Approach). As was the case in the Income Capitalization Approach, a common unit of comparison should be utilized when analyzing sales and prices in the Sales Comparison Approach. In downtown Washington, DC this unit of comparison is typically based on price per square foot of net rentable area ($/SF-NRA). However, in other markets or when smaller properties are involved, the unit could be based on gross building area. Once again, regardless of the unit of comparison, it is important to be consistent in the analysis. The following page contains a typical write-up for a sale comparable in downtown Washington, DC.

Following the rental write-up is a summary chart containing several recent leases in directly competitive buildings in the East End submarket of downtown Washington, DC.
Sale Comparable Write-up

Location
1625 Eye Street, NW
Washington, DC

Building Data
Tax Map Identification: Square 0185; Lot 0828
Year Built: 2003
# Stories/Typical Floorplate: 12 stories; 33,000± SF floorplates
Net Rentable Area: 383,264 SF-NRA
Gross Building Area: 400,220± SF-GBA (above-grade only)
Land Area: 40,022 SF
FAR Buildout: 10.0x (based on above-grade GBA)
Parking: 1.04 spaces per 1,000 SF
Occupancy Rate: 52% (see comments)

Sale Data
Consideration: $157,500,000 ("as is" contract price – see comments)
$175,000,000± (buyer’s projected “stabilized” value)
Date of Sale: December 23, 2003
Grantor: ULLICO
Grantee: Beacon Capital
Deed Reference: 2003184972
Financing: Assumed Cash to Seller
Unit Values/Indicators

Unit Price:  
$411/SF-NRA ("as is" price – see comments)  
$457/SF-NRA (projected "stabilized" value – see comments)

Overall Rate:  
7.25-7.50% (on a "stabilized" basis – see comments)

Discount Rate:  
9.5-10.0% (on "as is" price and NOI – see comments)

Terminal Cap Rate:  
8.0%

Comments:

This newly constructed office building (2003 completion) is located mid-block on the north side of Eye Street between 16th and 17th Streets, NW. The property was constructed by the Union Labor Life Insurance Company (ULLICO), who also occupies roughly 20%± of the premises as its national headquarters. ULLICO is selling the property due to financial difficulties on other fronts.

The construction of the property is very high-end and would be considered a "trophy" quality property except for the following factors: A) it has a mid-block orientation (not corner); B) it does not have an "address" (e.g., Pennsylvania Ave., Connecticut Ave., etc.), and C) it is not located on a park and does not have particularly good views, with the exception of the fact that the White House can be seen (2 blocks south) from the upper-most floors and roof-top terrace.

At the time of sale the property was 52% occupied. A reliable third party reported that the contract price was $157.5 million on an "as is" basis, with approximately $17.5 million in costs remaining to be spent, which are detailed as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;As Is&quot; Price:</td>
<td>$157.5 million</td>
</tr>
<tr>
<td>TI's ($55±/SF):</td>
<td>$10.0 million</td>
</tr>
<tr>
<td>Commissions:</td>
<td>$3.5 million</td>
</tr>
<tr>
<td>Downtime (Absorption):</td>
<td>$4.0 million</td>
</tr>
<tr>
<td>&quot;Stabilized&quot; Price:</td>
<td>$175.0 million</td>
</tr>
</tbody>
</table>

The yield rate reported for the property was approximately 9.5-10.0% on an "As Is" basis, which is slightly higher than current "market" yield rates to the fact that the property is not yet stabilized and must undergo absorption (estimated at 8-12 months).
It was reported that the “going-in” cap rate for the property on a “stabilized” basis would most likely be in the 7.25-7.50% range, but that the actual “going-in” cap rates in the early years of the cash flow were as follows:

| Year One NOI: | 4.0% |
| Year Two NOI: | 7.4% |
| Year Three NOI: | 8.1% |

The reason for such a low cap rate in year one is due to the fact that the property is not yet stabilized. The reported terminal cap rate for the property (10-year hold) was 8.0%.

Verification: Information verified by unsuccessful bidder, 11/03.
Typical Adjustment Factors – In the sales comparison analysis, the two common basic techniques that are utilized in the adjustment process are quantitative and qualitative techniques. Quantitative techniques are adjustments that can be calculated with a relatively high degree of certainty using mathematical calculations, and are generally applied first in the adjustment process. Qualitative adjustments are used to account for specific elements of comparison that are not easily quantified via a mathematical calculation. In practice, the availability of market data will typically determine whether or not quantitative or qualitative adjustments will be made for particular elements of comparison. When a significant amount of detailed information is available on the sales for certain factors, there is a higher probability that quantitative adjustments can be applied for these elements of comparison. Most appraisers use quantitative adjustments in the form of an adjustment grid when possible. Some of the usual items to take into consideration when comparing the sales comparables to the subject are as follows:

* **Expenditures made immediate after purchase** – Since many buyers of properties make substantial capital improvements or alterations to a property after the sale (e.g., for TI’s or leasing commissions as in the prior write-up), it is often necessary to quantify these items and factor them into the sale price prior to making any other adjustments. The best way to verify such items is to interview the buyer and determine how much was initially budgeted for capital expenditures prior to the sale, what the actual cost of the improvements or alterations were, and what items were negotiated in the sale price.

* **Property Rights Conveyed** – When comparing leased properties to one another, the impact of lease terms (long or short term), contract rental rates (vs. market), and occupancy levels must be appropriately analyzed. In a stagnant market, a building that is fully leased with long-term tenancies may be very desirable. However, in a rapidly expanding market, it may be more desirable to have shorter-term leases so that higher rental rates can be garnered as leases expire. When analyzing property rights conveyed, an appraiser must identify the differences among the comparables and how they relate to the property being appraised. This adjustment category is tied very closely to the factors discussed relating to capitalization and yield rates and should be analyzed in a similar fashion, with adjustments made accordingly. Once again, verification of pertinent facts relating to the sale is paramount when making adjustments for Property Rights Conveyed.
* Financing Terms – When analyzing financing terms at comparable sales, it is often difficult to quantify this factor, as detailed information relating to the financing at the various sales (interest rate, remaining mortgage term, amortization period, pre-payment penalties, assumption of mortgage or new mortgage, etc.) is often difficult to obtain. If a property is being appraised on an “all cash” basis or assuming “market financing” will be obtained, it is important to attempt to quantify the differential in price attributable to “non-market” (favorable or unfavorable) financing at the sales comparables. This is particularly important in a rapidly rising or falling interest rate environment.

* Condition of Sale – The condition of sale adjustment is often difficult to quantify because it involves making direct comparisons between properties when the motivations of buyers and sellers may not be consistent with ordinary “market value” parameters. For example, if the buyer and seller are related parties, the sale price may not be reflective of the price the property would have achieved on the open market. If a sale involves a 1031 exchange, a buyer may have paid a slight premium in order to complete the sale quickly and meet the deadline of the exchange program. Interviewing buyers and sellers is important in order to determine condition of sale adjustments, but these interviews should be taken with a “grain of salt”. Even when buyers and sellers are interviewed, the magnitude of the adjustment may not be easily obtained, but usually the “direction” of the adjustment (up or down) can be obtained from buyer/seller interviews. It is also important to note that in smaller transactions or in buyer/user or single-tenant facilities, actual sale prices will often be 5-15% higher than the price or value that would be indicated based strictly on the income-producing capacity of the property. The reason for this is that owner/users typically view a building from a utility type of perspective (i.e., how it can meet their specific needs) rather than from an investment (income-producing) point of view. In the event that a buyer places a significant amount of value on being in a certain location or if a building meets their specific needs or space requirements, they may be willing to pay a slight premium in order to “outbid” everyone else. As such, some owner/user sales may need to be adjusted downward if your property is a multi-tenant building. (The converse may be true if your subject property is an owner/user type of facility).

* Market Conditions – Adjustments for market conditions can usually be made with a reasonable degree of accuracy by examining sales of similar properties over time, or by re-
sales of the same property within a fairly short period of time (a few years). However, it is important to realize that appreciation (or depreciation) does not have to follow a linear pattern. Prices may remain fairly flat for a long period of time and then experience a quick "spike" in price. Statistical tools such as regression analysis and extrapolation, or sorting/plotting sales on a graph may be useful.

* Location - The location adjustment is used to account for differences in locational attributes such as proximity to major roadways or other desirable (or undesirable) uses. Typically, adjustments for location are best supported using paired data analysis.

* Age/Condition – This factor accounts for differences in sale prices that are a result of the age/condition of a property. As was the case in the Income Capitalization Approach, when making adjustments for age/condition, it is necessary for the appraiser to understand the construction quality of the subject and the comparables and make appropriate adjustments for any "above standard" or "below standard" items. Heavy reliance on property inspections should be utilized when making age/condition adjustments since depreciation schedules are based on averages across a wide range of properties and do not account for historic properties or those that have been extensively renovated.

* Physical Attributes – This adjustment category can be used to account for a variety of factors. Some of the more typical items would be differences in overall building size, number of stories, quality of construction, size/shape of floorplates, on-site amenities, parking ratio, building efficiency ratio (NRA/GBA) etc. As in the Income Capitalization Approach, I typically account for the adjustment between a "mid-block" building and a "corner" building in this category as well.

* Tenancy/Size – In the Sales Approach, this adjustment category is used to account for factors relating to the credit of the tenants in the building or any impact the size of the property may have on the sale price, particularly in the case of extremely large or small properties.

* Use/Zoning – In use/zoning adjustment category, the current zoning of the property (allowable uses, density, etc.) needs to be analyzed, along with the current use and/or highest and best use of the property. When analyzing this category, it is important to determine that the zoning and highest and best use of the comparables is similar to the subject, or else it may not be a good comparable. In addition, particularly in suburban locations, there is the possibility that some "excess land" may exist that can accommodate
additional development. If this is the case, the appraiser should attempt to quantify how much value should be attributed to this “excess land” to derive a value for the building improvements only. (This adjustment could be accounted for in another category, which is fine as long as it is discussed properly and not “double counted” or ignored altogether).

Conclusion of Value – After all of the sales has been adjusted to the subject, the appraiser may want to rely more heavily on a few sales as the “best comps” for the subject. The most important factors in the Sales Comparison Approach are choosing the properties that are the most physically similar to the subject in terms of age/condition, location, market appeal, etc. In rapidly moving markets (as is the case at the present time), a greater urgency should be placed on obtaining the most up-to-date sales data possible since market conditions are changing rapidly. This being said, it is worth reiterating that verifying the pertinent facts as it relates to the financial factors surrounding a sale (rental rates, remaining lease terms, contract rents vs. market rents, etc.) is vital, especially if your property has some unusual factors. Without detailed verification of the sales (particularly as it relates to cap rates and yield rates, which are utilized in the Income Capitalization Approach), the appraiser will have difficulty in tying the two approaches (Income and Sales) together.

Factors to Consider in the Cost Approach

The first step in the Cost Approach is to gather pertinent land sales to determine the value of the underlying land at a property. While the primary measure of a building’s size was net rentable area (NRA) in the Income Capitalization and Sales Comparison Approaches, in the Cost Approach land sales are typically analyzed using square foot of floor area ratio (SF-FAR) as the means of comparison. A building’s floor area ratio (FAR) is the amount of gross building area above-grade (excludes basement areas and subsurface parking), and is the common method of analyzing/pricing land sales in “close-in” areas of the Washington, DC Metro Area, as this is how the maximum development density for a site is determined based on zoning regulations (other areas could use different figures). (In other areas it would not be uncommon for land sales to be examined on a $/SF of land basis or a $/Acre of land basis). While land sales are typically examined based on SF-FAR, a building’s construction costs are usually examined based on total gross building area (GBA), which includes any space located below-grade. A typical land sale write-up for a site in Washington, DC is shown on the following page.
Land Sale Comparable Write-up

Location
701 8th Street, NW
Washington, DC

Site Data
Size: 21,497 SF
Tax Map ID: Square: 0429; Lot: 0838, 7000
Zoning: DDC
Total FAR: 139,000± SF (6.47x)

Sale Data
Date of Sale: December 2002
Grantor: Calvary Baptist Church
Grantee: G Street, LLC c/o New World Management
Deed Reference: 2002-150670
Consideration: $15,170,030
Financing: Assumed cash equivalent

Unit Values/Indicators
Unit Value/SF-FAR: $109.14/SF-FAR
$705.68/SF-Land

Comments: This site is located at the corner of 8th and G Streets, NW just 1 block west of MCI Center and Gallery Place/Chinatown. An 8-story office building that will ultimately contain 139,000 SF is presently under construction on the site. Several existing historic buildings will on the site will be preserved and incorporated into the design per requirements of the HPRB. The tentative completion date is January 2005.

Verification: Knowledgeable third party and COMPS, 10/03.
Typical Adjustment Factors – When analyzing land sales, the same basic adjustment factors are used as in the Sales Comparison Approach (property rights conveyed, financing terms, condition of sale, market conditions, location, physical attributes, etc.). Aside from the more obvious adjustment factors like location and market conditions, some of the more pertinent factors to consider when analyzing land sales are listed below. These items are not necessarily adjustment “categories” per se, but items that should be taken into consideration in one of the adjustment categories.

* **Condition of the Site** – What was the physical condition of the site at the time of sale? Was it in a “raw” state in need of utilities and/or other infrastructure before construction was it “finished” and ready for construction? Are there existing structures that need to be demolished or that can provide interim income before construction commences? Are there historic buildings that must be preserved and incorporated into the new building’s design, which will increase construction costs (common in downtown Washington, DC)? Was the site environmentally clean at the time of sale?

* **Physical Characteristics of the Site** – Is the site somewhat regular in shape (rectangular or square), or is it irregularly shaped? Is it fairly level or gently sloping, or will it require a significant amount of costly sitework to ready the site for construction?

* **Proposed Density** – Is the existing or proposed density for the subject site consistent with the comparables? Does it represent a maximum utilization of the allowable FAR. It is important to note that economies of scale in construction are often possible in construction projects, such that a building with a 10.0x FAR can be can be constructed slightly less expensively than a building with a lower FAR of 5.0x.

* **Size** – The size of a site or development is an important factor to take into consideration because extremely large sites will take much longer to develop and absorb than smaller sites. As such, they are generally priced slightly lower to account for the added carrying costs and risk of owning/developing a large site and undergoing absorption. On the other hand, extremely small sites may be priced lower as well due to limited economies of scale in construction. This being said, the reverse could also be true in that there are many more bidders for a small site vs. a larger one, which results in the price being “bid up”. In any case, how the size of a site contributes to its price/value is unique to individual markets and
must be analyzed by the appraiser based on market parameters (i.e., how the market perceives size differences).

* **Structured Parking Requirement** – This is an extremely important factor to take into consideration, particularly in suburban locations. In downtown Washington, DC it would be expected that a building would have structured parking (nearly all do) unless there are unusual factors surrounding the site (e.g., it is located on top of a Metrorail Station). However, in suburban locations this is not necessarily the case, as structured parking is usually not feasible (i.e., the costs to build structured parking cannot be recouped in the rental rate or by charging additional for parking). As such, when analyzing land sales in suburban locations it is vital that this be taken into account because if one site requires structured parking and another doesn’t an adjustment is probably needed for this factor.

**Important Note:** Another important point to consider relating to structured parking and FAR buildouts is that suburban office sites can generally be built out to a FAR of around 0.30-0.35x before structured parking will be necessary. Even if it is possible to utilize a smaller portion of the site for the building footprint and build a taller building, the portion of the site taken up by parking spaces and landscaped green space typically limits surface parked buildings to maximum FAR’s of 0.30-0.35x. This is very important from an appraisal perspective because many suburban jurisdictions may have a maximum FAR of say, 1.0x but nearly all the properties will be built out to FAR ratios of 0.30-0.35x due to the “infeasibility” of structured parking. As such, when appraising a vacant land site, a competent appraiser must use the 0.30-0.35x FAR figure when estimating the amount of “likely” building area a vacant site can support rather than the “maximum” FAR of 1.0x in cases where structured parking is not feasible. (The other option is to take into account the above-standard costs of structured parking, which would reduce the land value). If structured parking is feasible and other buildings are built out to maximum 1.0x FAR’s, then it is possible to use this maximum figure. Otherwise, an appraiser runs the risk of valuing a site at roughly 3 times what it is actually worth.
Conclusion of Value – After all of the land sales have been adjusted to the subject, the appraiser may want to rely more heavily on a few sales as the “best comps” for the subject. These properties will generally be the ones requiring the fewest adjustments, or the ones were detailed information was gleaned through the verification process such that reliable quantitative adjustments could be made.

Construction Costs – Once a land value estimate is finalized, the next step is to estimate construction costs for the project. Cost estimates are either based on reproduction cost or replacement cost and can be estimated using the Comparative Method (aka “square foot” or “cubic foot” method), the Segregated Cost Method (aka unit-in-place method), or the Quantity Survey Method. The Comparative Method represents a somewhat simple, practical approach to a cost estimate. This method is based on a unit cost figure and is typically applied to gross building dimensions. This is a method of estimating cost by comparison with that of similar structures; these costs are measured in units per square foot of gross floor area, or by cubic foot of building construction. In estimating these costs, three sources are generally considered: 1) cost estimator services such as Marshall & Swift or F.W. Dodge; 2) actual construction/development budgets for other newly constructed or proposed developments that are deemed similar to the subject; and 3) a detailed replacement/reproduction cost estimate for the subject (prepared either by third-party developer or actual budget for recently completed projects). Cost estimator services are fairly accurate, but can “lag” the actual market when there are “spikes” in construction costs (as has been the case recently for items such as steel and plywood). The best source of costs are detailed development budgets, but these are often very difficult to obtain unless an appraiser is extremely active in doing appraisals on a number of proposed or recently constructed projects. Once again, the primary factor to take into consideration in analyzing construction costs is that they are typically applied to a building’s gross building area (GBA). Although this could be varied to another figure such as net rentable area (NRA), consistency is the main objective in analyzing the subject and the comparables.

Entrepreneurial Incentive/Profit – The final step in estimating the replacement cost new for a property is estimating entrepreneurial profit/incentive. This is what a developer “expects” to receive for his or her contribution to a project. It is typically based on discussions with market participants and is generally in the 5-15% range depending on market conditions, specific property characteristics, etc. It is worth pointing out that as it relates specifically to entrepreneurial profit vs. entrepreneurial incentive,
the term entrepreneurial incentive refers to the amount a developer expects to receive as compensation for undertaking a development project, whereas entrepreneurial profit is the difference between the total cost of the development and the market value of the property after it is completed and operating at a stabilized occupancy (i.e., it is calculated "after the fact"). As The Appraisal of Real Estate, 12th edition puts it, "In essence, (entrepreneurial) incentive is anticipated while profit is earned". Due to the development time frame of a typical project (2-3 years from conception to completion, plus another year for stabilization), external market factors can change significantly during construction of a project. As such, actual entrepreneurial profit (realized) may differ significantly from the entrepreneurial incentive (anticipated) for a development project.

Depreciation – Once replacement cost new is estimated, it is necessary to account for depreciation. There are three types of depreciation that can accrue to real property improvements: physical deterioration, functional obsolescence, and economic obsolescence. These are summarized as follows:

*Physical deterioration* – “wear and tear from regular use and the impact of the elements.”

*Functional obsolescence* – “a flaw in the structure, materials, or design that diminishes the function, utility, and value of the improvement.”

*External obsolescence* – “a temporary or permanent impairment of the utility or salability of an improvement or property due to negative influences outside the property. (External obsolescence may result from adverse market conditions. Because of its fixed location, real estate is subject to external influences that usually cannot be controlled by the land owner, property, or tenant).”

As discussed previously, physical depreciation is based primarily on a property’s effective age and is determined largely on how the market perceives a property rather than on its actual age. Functional obsolescence in an office building would deal with items such as inadequate parking, low ceiling heights, narrow corridors, inefficient layouts/floorplates, insufficient elevator/electrical capacity, antiquated mechanical systems, etc. External obsolescence would deal with items such as undesirable uses such as a landfill, sewer treatment plant, heavy industrial users, etc.

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Conclusion – Once all factors of depreciation are taken into account, the result is an estimate of the “As Is” value of the property, which can be compared to the value conclusions via the Income Capitalization and Sales Comparison Approaches. It is important for an appraiser to realize that the Cost Approach does not take into account the income-producing capacity of the property. As such, in cases where there are substantially above or below-market leases in place, an unusually high level of tenant “credit”, long-term leases, or in abnormally low capitalization rate environments (as is the case at the present time), the value via the Cost Approach may be markedly different from the value indications via the Income Capitalization and Sales Comparison Approaches. This is perfectly ok, but any substantial “gaps” in value between the approaches should be explained to the reader (i.e., reconciled). In many cases, developers are realizing “excess” entrepreneurial profit as a result of substantial cap rate declines between the time a project was being developed coming out of the ground (cap rates of 7.5%) and the present time when the property is reaching a stabilized occupancy level (6.5% cap rates). As a result of simply the cap rate shift (no other changes), the impact on value is 15%. Of course this will have an impact on land values and such, but given that interest rates are on the rise and that cap rates should soon follow, a prudent developer would not likely build a project currently that necessitates getting a 6.5% cap rate, but rather with the expectation or hope of selling at a 6.5% cap rate (he would likely “build to” a 7.0-7.5% cap rate). This partially explains the “excess profit” scenario and some of the reasons for a “disconnect” between the value conclusions via the Income Capitalization and Sales Comparison Approaches and the Cost Approach.

Conclusion

Office buildings come in many shapes and sizes and are designed to meet the needs of a number of different types of tenants. When appraising an office building the main factors to keep in mind are the potential users and tenant profiles for buildings such as the one being appraised, as well as the factors “drive” the competitive market for a particular property. Establishing where an office building “fits in” with its competitive marketplace and what factors are most important to potential tenants/users (location, building finishes, competitive pricing, etc.) is essential when valuing an office property. It is necessary for an appraiser to understand the local market in which the office building competes and the characteristics of typical office buildings in the area (size, FAR buildout, parking ratios, building amenities and finishes, etc.) to appropriately value an office property.
There are plenty of sources that can be used to verify factual data as it relates to sales of buildings and land in the marketplace (e.g., CoStar COMPS, public records, news clippings, etc.). Information on current trends in the market such as vacancy rates, inventory, net absorption, etc. can be derived from published market reports from a number of brokerage companies (e.g., Cassidy & Pinkard, Cushman & Wakefield, Grubb & Ellis, Trammell Crow, CB Richard Ellis, etc.). Data on rental comparables is typically derived from “trading comps” with other appraisers, conversations with brokers active in the marketplace, or from building owners. The real estate industry is information-intensive and a good appraiser should be well connected to individuals and companies that actively participate in the market. Having an active network of real estate professionals that you converse with on a consistent basis is by far the best way to be “up to speed” with current market conditions and is certainly the best way to verify the “hard to get” data such as cap rates, yield rates, current contracts that haven’t yet “hit the street”, and other pertinent factors relating to sales transactions that won’t show up in news publications and public records. These types of relationships are what separates the good appraiser from the average appraiser and can go a long way in establishing a loyal client base that values high-quality appraisal work.
KEY FACTORS TO CONSIDER
WHEN ANALYZING OFFICE BUILDINGS

MAY 5, 2005
BY: Rusty Rich

OFFICE BUILDING CHARACTERISTICS

• CLASS — "Trophy", A, B, or C
  • Determining Factors: age, quality of finishes, location, visibility (corner/mid-block), lease rates, tenant profiles, etc.

"Trophy" or Top Tier Class A Building
1301 K St, NW - Washington, DC

Class C Office Building
1126 16th St, NW - Washington, DC
OFFICE BUILDING CHARACTERISTICS

• Location – CBD or Suburban
  • CBD is usually the “Prime” or “Preferred” location and attracts law firms, consulting firms, government, etc.
  • Suburban office space is usually oriented more towards transportation corridors, hospitals, universities, destination retail, or other business magnets.
  • Some markets have characteristics of both CBD and Suburban (e.g., Rosslyn submarket of Arlington, VA – shown below)

OFFICE BUILDING CHARACTERISTICS

• Use
  • Single-tenant, multi-tenant, owner/user, etc.
  • Medical office, flex buildings, etc.

• Size
  • Can range from a few thousand square feet to several million
  • Low-rise (1-3 stories), mid-rise (4-15 stories), high-rise (over 16 stories)
  • Ideal floorplate is rectangular and measures 20,000-30,000 SF.
Office Building Characteristics

Right: 701 12th St, NW - 65,000 SF Floorplate
(Too large with a significant amount of "dead space" in core)

Left: 700 11th St, NW - 25,000 SF Floorplate
(Perfect size with high ratio of windowed offices and an efficient core)

Office Building Characteristics

- Features/Amenities
  - Parking (particularly for Class A in CBD)
  - Proximity to mass transit (more attractive to Class B/C space)
  - Suburban parking ratio 3-4 spaces per 1,000 SF
  - Quality of finishes
  - Electrical and telecommunications equipment (high-tech)
  - Proximity to executive housing (Class A) and solid middle-class workforce (all types)
  - Health club, retail, restaurants, etc.
ANALYZING THE OFFICE MARKET

• UNDERLYING ECONOMY OF THE AREA, PROSPECTS FOR EXPANSION, GROWTH OF OFFICE- USING SECTORS OF THE ECONOMY, DEVELOPMENT CLIMATE, AVAILABILITY AND COST OF LABOR, ETC.
• HISTORICAL TRENDS AND STATISTICS (BOTH BY BUILDING TYPE AND CLASS) FOR VACANCY RATES, NET ABSORPTION, RENTAL RATES, ETC.
• PROPERTIES CURRENTLY UNDER CONSTRUCTION AND/OR PROPOSED
• ANALYSIS SHOULD BE DONE BOTH ON A "MACRO" BASIS, AS WELL ON A MORE SPECIFIC "MICRO" BASIS (ANALYZING SPECIFIC SUBMARKETS)

<table>
<thead>
<tr>
<th></th>
<th>Year-End 20XX</th>
<th>Unit Rent Rate</th>
<th>Net Absorption</th>
<th>Class A/Mixed Rent</th>
<th>Class B/Rental Rent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office</td>
<td>$100,000</td>
<td>$35.00</td>
<td>100,000</td>
<td>$100,000</td>
<td>$90,000</td>
</tr>
<tr>
<td>Retail</td>
<td>$50,000</td>
<td>$40.00</td>
<td>50,000</td>
<td>$50,000</td>
<td>$40,000</td>
</tr>
<tr>
<td>Total</td>
<td>$150,000</td>
<td>$37.00</td>
<td>150,000</td>
<td>$150,000</td>
<td>$130,000</td>
</tr>
</tbody>
</table>

FACTORs TO CONSIDER IN THE INCOME APPROACH

• BASIS OF COMPARISON
  • SPACE USUALLY MEASURED AND RENTAL RATES QUOTED BASED ON NET RENTABLE AREA (NRA).

• EXPENSE STRUCTURE
  • HISTORICALLY FULL-SERVICE (FS), BUT MANY NEW BUILDINGS USING TRIPLE-NET (NNN) LEASES. ADJUST RENTAL RATES TO YOUR PROPERTY SO AN "APPLES TO APPLES" COMPARISON IS MADE. IT IS ALSO VERY IMPORTANT TO MODEL LEASES CORRECTLY, TAKING INTO ACCOUNT ANY REIMBURSEMENTS TENANTS PAY OVER BASE YEARS.

• LEASE TERMS
  • RECOGNIZE "TRENDS" RELATING TO TENANT SIZE, CLASS OR AGE OF THE BUILDING, ETC.

• RENTAL ESCALATIONS
  • ANNUAL % INCREASES, FIXED "BUMPS", OR A COMBINATION OF BOTH.
FACTORS TO CONSIDER IN THE INCOME APPROACH

**TENANT IMPROVEMENTS**

* Can range widely due to factors such as length of lease, size of tenant, age of building, etc. Longer leases generally have higher TI’s.

* Tenant improvement allowances are usually higher for “1st generation” (brand new) space than for “2nd generation” (existing) space because some items can be re-used from tenant to tenant (lights, some doors, some walls, ceiling tiles, etc.). First generation spaces are built out from a “shell” (typically additional cost is around $15/SF).

* New 2nd generation tenants (relet space) generally receive higher TI’s than renewal tenants (less “re-working” of space).

* To adjust rental comparables to one another, it’s often useful to break down TI’s on an annualized basis and adjust to a “typical” range of say $4.00-$4.50/SF for new tenants and $2.50-$3.00/SF for renewals since “above-standard” TI’s are usually amortized into the rental rate and “below-standard” TI’s often result in lower rental rates.

<table>
<thead>
<tr>
<th>LEASE TYP</th>
<th>TI ($)</th>
<th>LEASE TERM</th>
<th>TI ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Gen. - Retail</td>
<td>$2500</td>
<td>0</td>
<td>$4.50</td>
</tr>
<tr>
<td>2nd Gen. - Retail</td>
<td>$3000</td>
<td>0</td>
<td>$4.10</td>
</tr>
<tr>
<td>3rd Gen. - Retail</td>
<td>$3500</td>
<td>0</td>
<td>$3.80</td>
</tr>
<tr>
<td>4th Gen. - Retail</td>
<td>$4000</td>
<td>0</td>
<td>$3.50</td>
</tr>
<tr>
<td>5th Gen. - Retail</td>
<td>$4500</td>
<td>0</td>
<td>$3.20</td>
</tr>
<tr>
<td>6th Gen. - Retail</td>
<td>$5000</td>
<td>0</td>
<td>$2.90</td>
</tr>
<tr>
<td>7th Gen. - Retail</td>
<td>$5500</td>
<td>0</td>
<td>$2.60</td>
</tr>
<tr>
<td>8th Gen. - Retail</td>
<td>$6000</td>
<td>0</td>
<td>$2.30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LEASE TYPE</th>
<th>TI/Year (Range)</th>
<th>TI/Year (Avg.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Gen. - Retail Average</td>
<td>$4.50</td>
<td>$4.50</td>
</tr>
<tr>
<td>2nd Gen. - Retail Range/Average</td>
<td>$3.50-$5.50</td>
<td>$4.35</td>
</tr>
<tr>
<td>3rd Gen. - Retail Range/Average</td>
<td>$2.50-$4.50</td>
<td>$3.25</td>
</tr>
</tbody>
</table>
FACTORS TO CONSIDER IN THE INCOME APPROACH

• **Unusual Adjustments (vs. other property types)**

  • **Physical Attributes** – Corner buildings generally have higher rent levels than mid-block buildings due to a higher ratio of windowed offices & better views/visibility.

  • **Lease Terms/Conditions** – Be on the lookout for unusually short or long lease terms, or above or below market rental escalations, as this can significantly affect "face" or "base" rental rate.

  • **Tenancy/Size** – Larger tenants do not necessarily receive discounted rental rates. In downtown Washington, DC there is presently a lack of extremely large blocks of Class A/Trophy space, so many large, "credit" tenants are being forced to pay premiums (in contrast to historical experience).

  • **Rent Conclusion** – In mid-rise or high-rise buildings it is often necessary to "price point" rent levels, as upper floors generally receive higher rents (better views, less noise, prestige, etc.).

FACTORS TO CONSIDER IN THE INCOME APPROACH

• **Other Income** – Parking (CBD), late fees, interest, vending machines, storage space, rooftop antennas, etc.

• **Operating Expenses** – Examine subject historicals and "expense comps" and be aware of different accounting practices for various expense categories.
FACTORS TO CONSIDER IN THE INCOME APPROACH

• CAPITALIZATION PROCESS
  
  • DIRECT CAPITALIZATION —
    • Best used for stabilized properties with consistent cash flow streams expected or for smaller properties (not "investment grade").
    • CAP rates typically derived from surveys, band of investment method, or from actual sales (preferred).
  
  • DISCOUNTED CASH FLOW —
    • Best used when analyzing uninstabilized properties where lost income from absorption of vacant space and related costs (TI's, commissions, etc.) must be taken into account.
    • Should be used when contract rental rates are substantially different from market rental rates.
    • Typically used for "investment grade" properties.
    • CAP rates and yield rates derived from surveys, buildup method, or sales. Actual sales data is by far superior to other methods.
    • General "rule of thumb" — Terminal CAP rates are usually 50-100 basis points higher than "going in" CAP rates.

---

![Table](image)
## Factors to Consider in the Income Approach

### Table 1: Rental Income and Expenses

<table>
<thead>
<tr>
<th>Year</th>
<th>Physical Occupancy</th>
<th>Total Rental Income</th>
<th>Operating Expenses</th>
<th>Net Operating Income</th>
<th>Vacant Periods</th>
<th>Vacant Occupancy Rate</th>
<th>Vacant Rate Adjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>95%</td>
<td>$120,000</td>
<td>$50,000</td>
<td>$70,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2021</td>
<td>92%</td>
<td>$118,000</td>
<td>$55,000</td>
<td>$63,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2022</td>
<td>90%</td>
<td>$116,000</td>
<td>$60,000</td>
<td>$56,000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 2: Market Rental Income and Expenses

<table>
<thead>
<tr>
<th>Year</th>
<th>Market Rental Income</th>
<th>Operating Expenses</th>
<th>Market Net Operating Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>$120,000</td>
<td>$50,000</td>
<td>$70,000</td>
</tr>
<tr>
<td>2021</td>
<td>$118,000</td>
<td>$55,000</td>
<td>$63,000</td>
</tr>
<tr>
<td>2022</td>
<td>$116,000</td>
<td>$60,000</td>
<td>$56,000</td>
</tr>
</tbody>
</table>

### Table 3: Capitalized Value

<table>
<thead>
<tr>
<th>Year</th>
<th>Cap Rate</th>
<th>Capitalized Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>4.5%</td>
<td>$25,000</td>
</tr>
<tr>
<td>2021</td>
<td>5.0%</td>
<td>$24,000</td>
</tr>
<tr>
<td>2022</td>
<td>5.5%</td>
<td>$23,000</td>
</tr>
</tbody>
</table>

### Table 4: Summary of Results

- **Total Rentable Area:** 10,000 sq ft
- **Average Rent per Square Foot:** $12.00
- **Vacancy Rate:** 5%
- **Expense Ratio:** 40%
Factors to Consider in the Sales Approach

• Capital Expenditures — Any capital expenditures planned immediately after a sale should be taken into account, and adjusted properly to the subject property (prior to other adjustments).

• Property Rights Conveyed — The impact of lease terms (long or short term), contract rental rates vs. market rental rates, and occupancy levels should be taken into account in this category. This adjustment category is tied closely to the factors discussed relating to capitalization and yield rates.

• Financing — Try and quantify adjustments for factors relating to remaining mortgage term, interest rate, prepayment penalties, etc. (often difficult to obtain).

• Condition of Sale — 1031 exchange or owner/user purchases may result in price premiums due to abnormal buyer motivations (a need to get money out quickly or a need to be in a specific building or location).

Factors to Consider in the Sales Approach

• Physical Attributes — Some of the more typical items that may require adjustments are as follows: overall building size, number of stories, quality of construction, size/shape of floorplates, building efficiency ratio (NRA/GBA), mid-block vs. corner, etc.

• Use/Zoning — Are current sales representative of highest and best use? Otherwise they may not be good comps. Determine whether or not any "excess land" exists at the comparables or the subject.

• Conclusion — Conclude to an appropriate value perhaps by relying on a few selected comparables as being the "best Comps". Values are typically reported on a $/SF NRA basis, but GBA can be used, particularly for smaller buildings or for single-tenant or owner/user buildings.
Factors to Consider in the Cost Approach

- **Unit of Comparison** — Land in "close-in" areas is typically analyzed based on $/SF-FAR (floor area ratio). Floor area ratio is above-grade gross building area (excludes basements and subsurface parking). In further-removed areas, $/SF of land or $/Acre may be used.

- **Condition of Site** — Adjustments for raw vs. finished sites. Are there any existing improvements that need to be demolished and removed? Are there any historic buildings that need to be preserved and incorporated into the design (common in urban areas)?

- **Physical Characteristics** — Do the shape of the site and topography warrant abnormal construction costs?

- **Proposed Density** — Does a proposed building use or the subject's current/proposed use maximize allowable FAR?

Factors to Consider in the Cost Approach

- **Size** — Extremely large sites will take longer to develop and absorb than smaller sites, so these added risk factors and carrying costs should be taken into account. That being said, extremely small sites have more limited economies of scale in construction than larger sites. However, there are typically more bidders for small sites. There is no "rule of thumb" with respect to size (in terms of an optimal square footage), except that it should be examined in the context of the individual market.

- **Structured Parking** — If structured parking is required, it is an important point to take into consideration, particularly in suburban areas where structured parking is often not feasible (i.e., the costs to build structured parking is not recouped in the rental rate or by charging additional for parking).

- **FAR Buildout** — When appraising a suburban office site, is the maximum FAR consistent with the "market standard" for FAR development (e.g., 0.30-0.35X "standard" vs. 1.0X "max allowable"),
FACTORS TO CONSIDER IN THE COST APPROACH

- **Construction Cost Estimates** - Construction costs are typically quoted based on a price per square foot of gross building area (GBA), which is NOT the same as FAR. Construction costs are estimated based on construction budgets, actual figures, or from cost programs such as Marshall & Swift and F.W. Dodge.

- **Entrepreneurial Incentive/Profit** - Profit is generally estimated at around 5-15% depending on details. It is important to realize that Entrepreneurial Incentive (projected profit) and Entrepreneurial Profit (actual profit) are NOT the same.

- **Depreciation** - Cost manuals are useful, but it is primarily a function of how the market "perceives" a building. Effective age is NOT the same as actual age.

- **Reconcile Cost Approach to Other Approaches** - It is important to note any substantial differences between the values via the Cost Approach and others approaches. At the present time, developers are earning substantial amounts of "excess profit", which should not continue (e.g., building to a 7.5% cap and selling at a 6.5% cap is a 15% value differential: all other factors being equal).

CONCLUSION OF OFFICE BUILDING ANALYSIS

1) **Always keep in mind the factors that drive the market for a potential area and the profiles of typical users.**
2) **Establish where your subject property "fits" in the market early in the analysis (this helps in the selection of comps).**
3) **Understand local market characteristics (typical size, FAR buildout, parking ratios, amenities, finishes, etc.).**
4) **Use appropriate sources for information.**
   a) **Sales Information** — Costar COMPS, public records, news clippings, etc.
   b) **Market Data** (vacancy rates, absorption, etc.) — Brokerage companies such as Cassidy & Pinkard, Cushman & Wakefield, Grubb & Ellis, Trammell Crow, etc.
   c) **Rental Comparables** — Brokers are your best friends. Trade data with other appraisers.
5) **Establish a network of real estate professionals that you converse with often. This is the best way to stay "up to speed" on the market, and this is how you will be able to verify the "hard to get" data such as cap rates, yield rates, current contracts that haven't "hit the street", and other pertinent factors relating to transactions. These types of relationships are what set apart the good appraisers from the average ones and what will help establish a loyal client base.**