The Institute’s Income/Expense Analysis® research program is now 64 years old. A brief survey of 200 apartment properties has developed into a major annual research effort encompassing over 10,250 properties. From this database, IREM annually produces over 1,000 pages of analysis published in five specialized volumes.

In 1976, the original apartment building study was supplemented with a survey of suburban office building operations. In 1978, the condominium and cooperative section was broken out of the apartment report and appeared for the first time as an independent publication. In 1982, the office building study was expanded to include downtown properties. In 1986, the Institute introduced a fourth publication analyzing the operating experience of federally assisted apartment buildings. A fifth publication, *Shopping Center* was added to the Income/Expense Analysis® series in 1991.

A consistent effort has been made to match the systematic increase in sample population and report quantity with qualitative improvements in the format, the method of statistical analysis, and the accuracy of the publications.

In this year’s edition of *Income/Expense Analysis®: Office Buildings*, the reader will find a sample more than ten times as large as that gathered for the original study and four times as many pages of reports and analysis.

### The Income/Expense Analysis® Database

The Income/Expense Analysis® database of the Institute of Real Estate Management is a valuable resource with a wide range of applications. Real estate professionals, private investors, governmental agencies, and researchers across the United States and Canada have turned to these surveys for sixty-four years to answer many of their questions. This data can prove to be of great service if correctly used and interpreted. It can achieve its purpose, however, only if it is applied accurately and carefully.

How is this information used in the real estate community? It may play many roles in a property’s conception, development, and life. It is frequently applied to the preparation of feasibility studies on contemplated developments: Will the income stream anticipated in a particular location successfully support the property’s development and operating cost demands? What revenues can be expected from different locations and different types of development? Are market conditions for this type of project favorable?

The Income/Expense Analysis® database is constantly used in budgeting for buildings under development and those already in full operation: Have ongoing building maintenance requirements been fully anticipated? Which expense categories are increasing, and at what rate?

These surveys are also applied to the detailed analysis of individual markets: What revenues will a particular market support? Are project rentals keeping pace with comparable properties? Will higher rentals be offset by increased vacancies?

The data is also drawn upon to verify cash flow projections for appraisals using an income approach to value. The information is also included in management reviews, many aspects of real estate research, tax appeals, etc. And certainly, its most obvious use is in operating comparisons for individual properties.

### Method of Statistical Analysis

All of the income and expense figures reported in this publication are represented as “medians” and “ranges.” This method of statistical analysis was adopted for several reasons.

An important factor is the consideration of the real purpose of these published statistics. They are intended to serve as a benchmark against which property managers, owners, developers, and investors can compare their own operating experience and are not intended to set a standard for the industry or to determine the ideal operating ratio.

It is evident that no two properties are going to encounter identical maintenance problems or run up the same utility bills during the year in spite of any structural, geographical, or operational similarities. The median and chosen range reflect far more accurately the real diversity in operating experience than a simple average.

In this publication the median describes what might be called the “typical” expense for a given sample, and the range reflects the upper and lower limits within which the central portion of the sample falls. (For a complete explanation of these values, refer to the section entitled “Interpretation of a Page of Data.”)

Another reason for adopting the median is to insure that exceptionally high or low figures do not unduly affect the published results. This is particularly important for small samples, where one large property with extraordinary maintenance costs could significantly increase the calculated average maintenance expenses for its city.

All data collection forms are carefully and systematically audited by project staff and by computer to eliminate any properties that fall too far outside normal operating experience. Use of the median further protects the reported figures from any unidentified errors or extremes.

Our coding techniques insure that all information is held in
strict confidence. Only the totals are published, never individual statistics or names.

**Description of Reports and Layout of the Book**

This edition has been compiled with the intention of facilitating the location of desired statistics. The reports have been grouped as follows:

**METROPOLITAN AREA REPORTS**

Where a metropolitan sample is sufficiently large the data is analyzed by building size, building type, age group and rental range in a separate metropolitan area report. The subcategories and their ranges for each of these breakdowns are listed below. These special breakdowns appear in an abbreviated format which includes only key line-items, subtotals, and totals.

- Building Size (Gross Area) in square feet: 5,000 to 39,999; 40,000 to 99,999; 100,000 to 249,999; and 250,000 or more.
- Building Type: 1 or 2 stories, 3 or 4 stories, 5 to 10 stories and 11 or more stories.
- Rental Range per square foot: $9.99 or less, $10.00 to $15.99, $16.00 to $19.99, $20.00 to $24.99 and $25.00 and up.

**REGIONAL REPORTS**

Certain regions have been grouped to insure a sufficient sample for each regional area reported. When analyzing regional data, the map located on page 21 will be helpful in determining the geographical area represented by each region number.

Where a regional sample is sufficiently large, the data is analyzed in the same fashion as for the larger metropolitan areas.

**NATIONAL REPORTS**

National data analyzed by building size, building type, age group, and rental range, as described above.

**SPECIAL REPORTS**

The periodic increases in utility expenses over the past few years have necessitated careful energy management. The heating fuel expenses are analyzed by region. Three other special reports analyze energy consumption, leasing fees and type of ownership.

**Sample Composition**

The sources of the financial data in this publication are the Institute’s CERTIFIED PROPERTY MANAGER® (CPM®), members and other real estate professionals who are involved with the fiscal management of office buildings. Data collection forms are distributed at the beginning of each calendar year and are accepted from January through the reporting deadline of April 30.

To be included in the sample, a submitted property must meet the following criteria:

- The minimum floor area of an accepted project is 5,000 square feet.
- The building must have been in operation for a full 12 months in the calendar year reported.

Contributors whose properties meet these criteria and whose buildings are included in the sample receive a complimentary copy of the Analysis or fifty percent discount when it is published, and an individual computer analysis of their building’s income and expenses.

**Cautions in Interpretations**

In the following paragraphs, the possible benefits of judicious interpretation are reviewed, along with the methods of putting these statistics to their proper and best use.

It is important to establish clearly what these statistical summaries cannot do and what they do not pretend to do. They do not establish standards for the operation of real property. They do not determine the proper or “ideal” operating experiences for a particular property type. They are summaries of the operating experience of contributed properties and provide a valuable basis for analysis and comparison.

It must be kept in mind that these summaries are compiled from a voluntary sample. The buildings included in the sample were not statistically selected and do not necessarily reflect the total range of operating experience for a particular city or region.

Any analysis of this data must place it in its proper context, with a full understanding of its advantages and limitations. These considerations can be grouped into three categories:

- General factors influencing interpretation.
- Factors relating to a specific market.
- Factors to be considered in comparing a particular property to the published statistics.

There are two important considerations which fall within the first category. First of all, the data is limited by time. In interpreting the contents of these surveys, the careful analyst will take into account the inevitable inflation that occurred
subsequent to the operating year summarized.

It is also significant to note that there are variations in the sample base from year to year due to the voluntary nature of the contributions. Reported fluctuations in income and expenses must be interpreted with this in mind. When evaluating the data on a particular market it must be remembered that the market conditions can experience dramatic changes in a relatively short period of time. New projects coming on line, for example, can have a significant impact on a local inventory. Changes in the economic climate, such as dramatic swings in interest rates, or unemployment rates, can result in short term shifts in market conditions. Thus, the data must be interpreted in its current context.

In addition, particularly on the metropolitan level, it is important to consider the relative size of each sample, and the relative size of the properties in the sample. By taking this information into account, any comparisons made will be more fruitful.

Finally, when making a comparison between a particular property and the survey results, it must be remembered that there are many possible reasons why the two might differ. The property in question might not be of a comparable size. The type of tenants for that property, or for the sample collected, might have special needs and require special or exceptional expenditures. Different owners and managers have naturally differing maintenance and care policies. The physical and structural features of the building may not closely match sampled properties. Lease terms may vary significantly and must be taken into account in a careful interpretation. A proper analysis requires that such considerations be explored.

When applied intelligently, this data can prove to be of great value and consequence. That is why it is drawn upon by thousands of lenders, appraisers, property owners, investors, developers, government agencies, researchers, and real estate professionals. It is of particular benefit to the professional managers of real property assets.

Comparing Your Property's Experience with the Data in This Publication

PREPARATION

For any comparison to be possible, it is essential that your property's income and expense figures share a format which is similar to the data as it appears on these pages. For effective comparison, you should convert your annual operating figures to match the income and expense categories as they are defined in the Appendix. A comparative data worksheet has been provided in that section for this purpose.

Your figures should then be translated into dollars per square foot. You may use any of three possible floor area definitions as a basis for your calculations: Gross Area of the Entire Building, Gross Rentable Office Area, or Net Rentable Office Area. Each income and expense figure for your property should be divided by the floor area of your building.

For example, if your annual insurance cost was $3,850 and your building's Gross Floor Area is 50,000 square feet, your annual insurance cost in dollars per square foot would be $0.08 ($3,850 ÷ 50,000 = 0.077; 0.077 rounded to the nearest whole cent is 0.08).

CHOOSING THE APPROPRIATE TABLE

You are now ready to take advantage of the data in the publication. You must now choose a sample or table which will provide you with an effective basis for comparison. There are intentionally many tables that may compare in one way or another with your property. It is recommended that you choose more than one.

If the metropolitan area where your building is located appears in the book as a selected sample, you may wish to begin by comparing your property with others in your city. You also may wish to compare your figures with data from your region, and with similar properties of the same size, age, rental range, or structural type. Several columns are provided on the comparative worksheet to permit you this flexibility.

ABSTRACTING COMPARABLE FIGURES FROM THE TABLES

When you have chosen a suitable table, you will want to use only those figures on the table which compare with your property's operations. For example, there are 12 maintenance expense categories listed on most pages of the publication. However, in any one year, your property may incur expenses in only three or four of those categories.

If that is the case, pull from each table only those figures which correspond to your property's operations. For example, if repairs, plumbing repairs, or roof repairs, do not copy those comparables on your worksheet.

Consequently, you should only use the subtotals and totals that appear in the book for quick preliminary comparison. After you have abstracted the data that directly applies to your property, you should calculate your own.

USING THE PUBLISHED RANGES

Having chosen appropriate tables, and selected from those tables the median income and expense data that applies to your property, you can begin to compare specific figures. You may quickly discover that your property does not exactly match many of the published median expenses reported. For example, you may note that your real estate tax figure is several cents above the median for your city.

There are many reasons, discussed previously, which might explain why your property's expenses differ from a city-wide median. However, for any particular line item, you can now benefit from the published ranges which appear for those samples with more than 10 buildings. You can return to the table and examine the Low and High columns which appear to
the right of the median column.

In the following section, and on pages 10 and 11, the layout and interpretation of each page of data will be described in greater detail.

**Layout of a Page of Data**

**FULL-PAGE REPORTS**

The data for “Selected Metropolitan Areas,” “Selected Regions,” and the “Total U.S.” samples are presented in a full-page format. Each report is identified in the upper right hand corner of the page. The Chart of Accounts printed on the left side of the page is divided into Income and Expenses.

The individual expense categories are grouped by type and subtotaled. Because the results are reported as medians and ranges, the subtotals will not add up exactly to the figure for Total Operating Costs, nor will the figures in a given subtotal section add up exactly to the subtotal. (Refer to page 11 for further explanation of subtotal calculations.)

The figure in the first column of any report describes the number of projects in the line-item sample. The next figure to the right is the size of the line-item sample in square feet (in multiples of 10,000) for the first floor-area category. The next three columns represent respectively:

- The median value of the line-item sample (Med) in dollars per square foot.
- The lower limit of the interquartile range (Low) in dollars per square foot.
- The upper limit of the interquartile range (High) in dollars per square foot.

On many of the reports, only the median will appear. The Low and High are calculated only for samples of 10 or more buildings.

Continuing across the page, the reader will find similar sample totals and calculations for each of the remaining floor-area categories.

**REDUCED-FORMAT REPORTS**

Additional reports analyzing metropolitan, regional, and national data by building type, size, age group, and rental range are presented in a reduced format.

These reports differ from the full-page reports only in the choice of line-items printed. Essential line-items and all subtotals and totals for major income and expense categories are presented across the page in a horizontal format identical to the full page reports.

**GREEN BUILDING SURVEY**

In 2010, a Green Building survey was introduced. The Green Building Survey is located in Part 5. The survey results break down green certifications to the types of green systems used in the properties surveyed. The survey also includes buildings which reported energy and water conservation modifications. All figures are based on the number of buildings that participated in the Green Building Survey. Not all buildings reported a certification, program or rating.

A green building is a building that has earned one of the qualifying certifications, see question #2 on the Going Green Building Survey in the Appendix. A non-green building is a building that has not earned a qualifying certification but has implemented at least one green system, see question #4 on the Going Green Building Survey in the Appendix.

Table 1A identifies the percentages of properties that are IREM® Certified Sustainable Properties and LEED® certified and the LEED® level they achieved. Table 1B identifies the percentages of properties that are certified in Green Globes™, BREAM® USA, and Local/Regional/State programs. Table 2A tracks both capital and non-capital operating efficiency improvements over the last five year. Table 2B summarizes EnergyStar® buildings and their ratings.

Table 3A lists the percentages of buildings (both green and non-green buildings) that have implemented energy efficient systems. Table 3B lists percentages of buildings utilizing renewable energy, Table 3C represents percentages of water management systems being used and Table 3D represents percentages of other green features and programs.

The second report on Green Buildings compares the utilities of all buildings, non-green buildings and green buildings.
INTERPRETATIONS

A variety of charts and graphs are contained in this edition of the Analysis. However, the vast majority share a basic format which are described and explained in the following paragraphs.

The Chart of Accounts

The various line-items are listed in a column on the left side of each data page. A number of abbreviations were adopted because of space limitations. A few of these are clarified below. For complete definitions of the terms used and the various income and expense categories, the reader should refer to the Appendix.

ABBREVIATIONS

For each of the following abbreviations, the term or expression abbreviated follows in italics.

OFFICES: Office Rentals
RETAIL: Retail Store Income
PARKING: Garage and Parking Income
RETAIL % INCOME: Retail Percent Income
MISC. INCOME: Miscellaneous Income
VACANCY/DELIN. RENTS: Vacancies and Rent Loss
TOTAL COLLECTIONS: Total Actual Collections
HTG/VEN & AC REPAIRS: Heating/Ventilation/Air Conditioning and Repairs
ELEV REPR/MAINT.: Elevator Repairs and Maintenance
E/I RATIO: Expenses over Income Ratio
NOC: Net Operating Costs
TOC: Total Operating Costs

Floor Area Categories

The medians and ranges are calculated in dollars per square foot for each of the three floor areas listed in sequence across the top of the data page: Gross area of the Entire Building, Gross Rentable Office Area, and Net Rentable Office Area. Definitions of these categories are found in the Appendix.

USING METRIC EQUIVALENTS

To convert to metric units, the following conversion factors may be used:

- 1 square foot = 0.0929034 square meters
- 1 square meter = 10.764 square feet

Adding this text should aid the user who must comply with the units of measurement mandated by the General Services Administration (GSA).

The Line-Item Sample

All of the properties did not report a dollar figure for each line-item or all three floor-are categories. The figures in the Building column (abbreviated BLGS) identify the number of properties in the sample reporting floor area and a dollar figure for that line-item. This is especially important in areas where the reader should pay particular attention to the number of properties used to calculate each line.

If the line-item sample is very small (less than five buildings), care should be taken in interpreting the results.

The Calculations

THE MEDIAN

The median of a set of measurements is defined as the middle measurement, identified after the measurements have been arranged in order of magnitude. As an example, if there are 13 buildings reporting the following values for Real Estate Taxes in dollars per square foot-

0.72 0.76 0.88 0.89 0.94 0.97 **0.99 MED**
1.05 1.07 1.10 1.13 1.24 1.26

-the **Middle** value of 0.99 is the median. If there is an even number of values reported, the higher of the two values has been chosen as the median. For purposes of comparison, the calculated average for this distribution is 1.00, very near the chosen median.

THE RANGE

In addition to the median, for samples of 10 or more buildings, the “interquartile range” is reported in terms of a Low and a High value. After the set of measurements has been arranged in order of magnitude, the Low and High values are chosen so that the bottom 25 percent of the sample falls below the Low and the top 25 percent of the sample lies above the High. Using the same example, for the following values-

0.72 0.76 0.88 **0.89 LOW** 0.94 0.97 0.99
1.05 1.07 **1.10 HIGH** 1.13 1.24 1.26

-the **Low** value is 0.89 and the **High** value is 1.10.

In interpreting the data as it appears in this publication for a particular line-item, such as Insurance, the value that best describes the sample is the median (Med) with the central 50 percent of the values falling between the **Low** and the **High**.
### SUBTOTAL CALCULATIONS

Due to the nature of calculating the median and the variability of line-item samples as discussed in the previous section, line-item medians will not add up to the medians obtained for subtotals or totals.

In the above example, the median subtotal is not the sum of the three bold figures which appear above it. Rather, the median subtotal is calculated independently.

<table>
<thead>
<tr>
<th></th>
<th>Bldg A</th>
<th>Bldg B</th>
<th>Bldg C</th>
<th>Bldg D</th>
<th>Bldg E</th>
<th>Bldg F</th>
<th>Bldg G</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grounds Maint</td>
<td>.02</td>
<td>.03</td>
<td>.04</td>
<td>.05</td>
<td>-</td>
<td>.05</td>
<td>.06</td>
</tr>
<tr>
<td>Maint &amp; Repair</td>
<td>.06</td>
<td>.07</td>
<td>.07</td>
<td>.08</td>
<td>.09</td>
<td>.09</td>
<td>.12</td>
</tr>
<tr>
<td>Painting/ Décor</td>
<td>.02</td>
<td>-</td>
<td>.03</td>
<td>.03</td>
<td>.08</td>
<td>.08</td>
<td>.09</td>
</tr>
<tr>
<td>SUBTOTAL</td>
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<td>.10</td>
<td>.14</td>
<td>.16</td>
<td>.17</td>
<td>.22</td>
<td>.27</td>
</tr>
</tbody>
</table>

### Additional Calculations

Several additional calculations are reported at the bottom of each full-page report.

### OCCUPANCY LEVEL

The median occupancy and vacancy levels of the report sample as of December 31, are calculated as percentages of total rentable floor area. Not every building reports an occupancy level.

### OPERATING RATIO

The Expenses over Income (E/I) ratio for the sample is determined by dividing the Total Operating Costs (TOC) by the Total Actual Collections (TAC) (the amount actually collected from all income sources).

### CONTRACTED CLEANING SERVICES

This figure represents the percentage of the buildings in the sample that contract out retail cleaning services.

### TENANT ALTERATIONS ALLOWANCE

The last two calculations reflect the average tenant alterations allowances (based upon rentable area), which the building owner allows for alterations for a new tenant, on a three-year and a five-year lease after the building is initially filled.

The adjacent figures in parentheses define the number of buildings that reported a figure for each of the calculations.

### Other Remarks

The operating expenses in the publication do not reflect such items as ground rent, mortgage interest, amortization, depreciation, income taxes, or capital expenditures for alterations, improvements or remodeling of occupied or public areas.

The blanks that appear in reported data represent insufficient data for that line-item, and not zero calculation.

Some of the survey participants submitted data on office projects which contained more than one building. The Buildings column on each page of data reflects the number of projects in each line-item sample. The total number of buildings that these projects represent is reported separately by metropolitan area.