



# UPGRADING TENANT SPACES

*For decades, tenants and landlords have engaged in leasing practices that create disincentives to invest in projects that reduce operating expenses. This appendix provides both principles and practical guidelines for renegotiating leases to enable both tenants and landlords to gain the financial and qualitative benefits of energy-efficient lighting.*

## EXECUTIVE SUMMARY

- Regardless of the present leasing structure, energy savings can be used to improve cash flow and create higher property values.
- The owner's net operating income (NOI) can be increased in proportion to the energy savings achieved by a lighting upgrade.
- Assuming a 10% capitalization rate, every \$1.00 saved in annual lighting expense (or \$1.00 increase in NOI) can translate into an increase of \$10.00 in asset value.
- Net leases can be renegotiated to lower the tenants' occupancy costs AND enable the landlord to earn a fair return on the lighting upgrade investment. This is accomplished by raising the tenant's rent payments by less than the savings in electricity costs.
- These negotiations can be initiated by either landlords or tenants.
- Leveraging energy savings to create asset value can be a particularly attractive strategy for publicly-traded landlords (e.g., Real Estate Investment Trusts) and publicly-traded tenants.

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## INTRODUCTION

### The Challenge

There are approximately 64 billion square feet of owned and leased commercial space in the United States. Of the non-government-owned space, approximately 63% is owner-occupied, while the remainder is non-owner-occupied or income property. While energy-efficiency improvements have been readily embraced by a wide variety of owner-occupants, certain characteristics of non-owner-occupied properties make the adoption of these measures more challenging.

By definition, owner-occupants own and manage the spaces that they occupy. They are responsible for both

*operating expenses* and *capital expenditures* in their spaces. As a result, the cost/benefit analysis of a lighting-efficiency upgrade in an owner-occupied property is relatively straightforward; the same party that pays the capital cost of a lighting-efficiency improvement directly benefits from any and all savings reflected in the electric bill. Traditional financial measures such as simple payback analysis and internal rate of return (IRR) are generally used to evaluate potential lighting upgrades, and decision-makers need not look beyond the *income statement* to see the positive impact of their investment in energy efficiency. Because the electricity savings produced by energy-efficient lighting upgrades can yield simple payback periods of less than three years, these projects often survive the scrutiny of the capital budgeting process and are funded.

In the case of income property, on the other hand, the *owner* of the building and the *occupant* of the building are two separate entities. While leases vary widely in their treatment of energy costs, it is common to find that the party responsible for approving and funding energy-efficiency-related capital improvements is *not* the party best positioned to benefit from the resulting increased energy-efficiency.

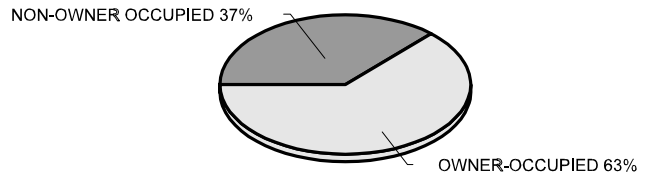
From the tenant's point of view, it is not always wise for the tenant to invest in improving the energy- efficiency of a property that it does not own, even if the lease makes the tenant responsible for electricity costs. This disincentive is even more pronounced if the remaining term of the tenant's lease is less than the simple payback period of the energy-saving improvement under consideration.

From the landlord's point of view, there is often no incentive to invest in energy-saving improvements inside the tenant's space, because many leases treat the electricity usage within the tenant's space as the responsibility of the tenant. Even in those situations where a landlord or a tenant is interested in pursuing energy-efficiency measures, additional challenges must be faced. Communication between landlords and tenants is often filtered through third parties, such as brokers, attorneys and property managers. Lack of information on energy-efficient alternatives, lack of access to capital, and unnecessarily high hurdle rates are just a few additional barriers.

In order to cope with these and other challenges to installing energy-efficiency improvements in non-owner-occupied properties, a new decision-making paradigm is necessary. Mechanisms are needed to allow a landlord who pays the cost of energy-efficient lighting to enjoy the benefit of the resulting reduction in electricity costs. The cost/benefit analysis of lighting upgrades must be expanded to include the effect of energy-efficiency improvements on income property

valuation. Finally, energy-efficient-lighting projects must be packaged in a way that gives landlords and tenants compelling reasons to work together to implement them.

## NON-GOVERNMENT-OWNED SPACE



## The Solution

This appendix presents a new and more complete approach to evaluating the financial costs and benefits of energy-efficiency upgrades in leased commercial spaces. It explains approaches for modifying tenant leases to make these measures more attractive to both landlords and tenants. Practical implementation strategies are included to help landlords and tenants make a smooth transition to a mutually beneficial energy-savings program. Finally, model lease clauses are provided to facilitate the implementation of these concepts.

Using the strategies, methods and lease clauses provided in this appendix, income-property owners and tenants will be better positioned to harvest the potential energy savings in their lighting systems, producing a win-win situation for both parties.

## CREATING VALUE IN REAL ESTATE

According to the income approach to real estate appraisal, the value of an income property is calculated by dividing the expected *net operating income* by the property's overall *capitalization* rate. Any change that results in either higher revenues or lower expenses for the owner increases the net operating income of that property, and hence increases its valuation for the purposes of refinance or sale. Higher net operating income is an *income statement* effect, while the resulting higher property value would increase the property owner's *net worth*.

**Readers who are unfamiliar with leasing terms, practices, or real estate appraisal methods should refer to the reference section beginning on page 13 of this document.**

## Increasing Rent vs. Reducing Expenses

Over the last ten years, there have been dramatic changes in the markets for most types of income property in this country. During the 1980s, income-property owners aimed to increase rents steadily, taking advantage of a growing economy, low vacancy rates and a generally strong leasing market. Because the income approach to appraisal capitalizes net operating income, every \$0.10 in increased monthly rent per square foot meant \$12 per square foot in increased property value (assuming a 10% capitalization rate). With this in mind, savvy landlords concentrated on the *revenue* side of the income statement, raising rents whenever they could in order to increase the asset value of their properties.

The leasing environment of the 1990s has necessitated a shift in strategy among income property owners. High vacancy, improved tenant sophistication and bargaining power, and other issues have made automatic rent increases less likely. Tenants seeking rent relief are becoming more common, especially when rental rates specified in renewal options are above market at time of renewal. Faced with a leasing environment that makes it difficult to raise rents, property owners are increasingly turning to the expense side of the income statement to improve net operating income.

## Reducing Expenses Through Lighting Efficiency

Energy expenses are a vital determinant of the profitability and value of a commercial building. Lighting consumes 35-44% of the electricity used by a typical commercial building. A 40% reduction in lighting energy costs could mean at least a 14% reduction in building electricity costs. Considering that any reduction in operating expenses results in an increase in net operating income, lighting energy-efficiency measures hold great potential for increasing an income property's capitalized value. Because *before-tax cash flow is net operating income less debt service*, these energy savings could generate a very large percentage increase in the property owner's after-debt-service rate of return.

Many income-property owners have already realized the benefits of improving the energy efficiency of the lighting in their buildings' common areas (spaces that are used by all building occupants, including elevator lobbies and the corridors connecting tenant spaces). Because tenants evaluate spaces based on total occupancy costs, not just rent per square foot, lower common area maintenance (CAM) expenses may permit the landlord to raise the base rent, which in turn produces higher net operating income for the landlord.

Some landlords have been similarly motivated to improve the lighting energy efficiency of spaces with gross leases. Because gross leases generally make the landlord responsible for all electricity costs, any investment made in energy-saving equipment in these areas reduces operating expenses, generating higher net operating income for the landlord.

If a landlord uses a strict simple payback period of one or two years (or an unrealistically high hurdle rate), even energy-efficiency-related capital projects in areas under gross lease may not get funded. For example, a landlord may choose not to upgrade the lighting in a gross-leased space that has *low operating hours*, or *low electricity costs per kilowatt/hour*, because the simple payback period is unacceptably long. In this specific example, a long simple payback period is almost inevitable if the landlord limits its payback analysis to the *annual energy savings* generated by the lighting upgrade. However, if the landlord's payback analysis were to include the effect that these annual energy savings would have on *property valuation*, there is a greater probability that this gross-leased space would become a financially attractive candidate for a lighting upgrade. (This issue is addressed in more detail in the section entitled, "Leveraging the Capitalized Value of Reduced Expenses.")

There are three principal reasons landlords are generally motivated to do lighting upgrades for common areas and for spaces with gross leases.

- ★ The lighting energy usage for these spaces can be readily segregated.
- ★ The lease clearly defines who is responsible for both *operating expenses* and *capital expenditures* in these spaces.
- ★ The resulting energy savings have a beneficial effect on the property's net operating income. In the case of common areas, the landlord is able to offer its tenants a form of rent relief without reducing the base rent per square foot. In the case of a gross lease, the landlord is able to increase its net operating income by reducing its own operating expenses.

## LEVERAGING THE CAPITALIZED VALUE OF REDUCED EXPENSES

The ability to capitalize the increases in net operating income produced by these electricity savings provides powerful leverage to get energy-efficiency-related capital projects approved and funded. This leverage becomes important when factors such as low operating hours or low electricity costs make the simple payback period of potential lighting retrofits unacceptably long.

Assume that an office building pays only \$0.035 per kilowatt hour for electricity, and assume that its tenants only operate for 2500 hours per year. It is likely that changing standard magnetic ballasts and T12 fluorescent lamps to electronic ballasts and T8 lamps would have a simple payback period of 7 or more years, even if one were to include savings from reductions in building cooling load, electricity demand charges, and maintenance expenses. For most income-property owners, a capital project offering a simple payback period of 7 or more years would be difficult to justify. However, if one were to capitalize the reduced annual operating expense produced by this retrofit, the resulting increase in property value would more than justify the project's funding. If the owner plans to draw equity out of the building through a refinance or sale in the near future, this option becomes much more attractive.

## Creating Value Through Reduced Expenses

Relatively small changes in net operating income (NOI) can drive significant changes in property value.

Assume a landlord is responsible for the electricity costs of its income property. Assume it installs, at its own expense, energy-efficient lighting upgrades at a cost of \$1 per square foot. Assume that these improvements produce \$0.35 per square foot per year in energy savings. This decrease in electricity expense produces an increase in NOI of \$0.35 per square foot. This represents an annual return of 35% on every dollar invested in the energy-efficient lighting upgrade.

Assume a capitalization rate of 10% is appropriate for this type of income property. If the income approach were used to appraise this property for refinance or sale immediately after these lighting improvements are installed, the property's asset value would be \$3.50

higher per square foot. This increase in asset value represents a 350% return on the \$1 per square foot investment. In this example, an investment of \$1 per square foot produces an income statement benefit of \$0.35 per square foot per year in higher net operating income, and a property valuation benefit of \$3.50 per square foot.

## RENEGOTIATING TENANT LEASES

The key to harvesting lighting-efficiency opportunities in the net and fixed-base leases is identifying who has the greatest incentive to fund the improvements. Lighting-efficiency improvements should be planned so that the party that has the most to gain from the energy savings both *funds the capital improvement and receives the majority of the benefit from that improvement*.

In most cases, converting an *expense reduction for the tenant* into a *net operating income increase for the landlord* will be the most lucrative way to harvest a lighting-efficiency opportunity in a leased property. This process essentially takes a portion of the "rental income" (i.e., the electric bill) that the tenant pays to the electric utility, and places it on the landlord's rent roll where it becomes net operating income and can be capitalized to create property value.

## Example of Net Lease Renegotiation

The following is an example of how income property owners can begin to approach the tenants who occupy the billions of square feet of floor space that are neither common areas nor gross leases. The figures are included for illustration purposes only and will vary based on prevailing electric rates, type of energy-efficient lighting upgrades proposed by the landlord, and tenant hours of operation.

"Mr. Tenant, I will pay 100% of the installed cost of energy-efficient lighting for your space. I intend to invest approximately \$1 per square foot to redesign your lighting to provide state-of-the-art, flicker-free, high-color-rendering light with brand new fixtures. Lighting levels and fixture placement will be professionally designed to optimize the lighting quality in your space. As a result of this upgrade, your electric bill will decrease by about 35 cents per square foot per year. I only ask that you increase your rent payment to me by 80% of the 35 cent electricity savings. In other words, it is estimated that your *electric bill will go down by 35 cents per square foot per year*. However, *your rent will go up by only 28 cents per square foot per*

**In most cases, converting an expense reduction for the tenant into a net operating income increase for the landlord will be the most lucrative way to harvest a lighting-efficiency opportunity in a leased property.**

year. Any reduction in your electricity bill that is more than your rent increase (i.e., greater than 28 cents per square foot) will be yours to keep.”

In theory, the tenant should be indifferent as to how much it pays the electric utility or the landlord each month, as long as the tenant’s overall occupancy cost does not rise. If, by cooperating with the landlord in this manner, the tenant can receive a brand new energy-efficient lighting system at no cost, *so much the better*. Any risk that the energy savings projected by the retrofit will not materialize can be mitigated by using one or both of the following approaches: 1) metering the tenant’s lighting energy usage, or 2) requiring the tenant to increase its rent only by a percentage of the projected electricity reduction, with the remaining savings passing to the tenant as a form of rent relief. Either of these approaches can be used to assure the tenant that the lighting upgrade is producing sufficient electricity savings to justify an increase in rent. However, using the approach of metering the lighting loads may prove to be useful later. At some point in the future, the tenant’s day-to-day operations may change and cause an increase in its electricity bill (e.g., increased hours of operation, or additional equipment loads). Isolating and metering the tenant’s lighting energy use will give the tenant ongoing assurance that its overall occupancy cost is lower than what it would have been in the absence of a lighting upgrade.

## **Negotiating Benefit-Sharing Mechanisms**

### ***Landlord-Initiated Negotiations***

The energy-savings opportunities available in net-leased commercial property have the potential to generate billions of dollars of value for income property owners. Landlords are advised to settle upon a sharing mechanism with their tenants that assures the tenants’ willing cooperation with the value-creation strategy.

Considering the combination of the income statement effect and the property valuation effect of an energy-saving retrofit that increases net operating income, the landlord can well afford to share a portion of the savings and make this a win-win situation for its tenant.

Because the tenant is assuming some risk that its electric bill will not decline as much as its rent increases, landlords should be willing to settle for an increase in rent that is equivalent to a percentage of projected energy savings (e.g., 60, 75, or 80%). The remaining percentage protects the tenant from an inaccurate estimate of energy savings. Even negotiating a 60/40 split of energy savings with the tenant does not significantly reduce the attractiveness of this strategy for creating property value, especially if it encourages more tenants to cooperate and have their spaces upgraded to energy-efficient lighting.

If one were to consider the income statement effect alone, taking only 60% of the projected energy-savings stream would clearly increase the simple payback period for the landlord. Using our previous example, a 35% annual return project becomes a 21% annual return project (the *landlord’s 60% share of the project’s 35% annual return* is 21% per year). However, when the property valuation effect is examined in the analysis, the financial reward to the landlord is still quite substantial. Using the prior example, a 350% return on each \$1 invested becomes a 210% return (the landlord transforms 60% of the \$0.35 energy savings into higher net operating income, which can be capitalized at 10% to yield \$2.10 in additional property value for each dollar invested in lighting upgrades).

When proposing this approach to tenants, landlords should be aware that the number of square feet to be upgraded will, in large part, determine whether the tenant will be more interested in cooperating for financial or non-financial reasons. For example, a tenant with 50,000 square feet of space may be motivated to participate because the tenant’s share of the annual lighting energy savings represents a significant dollar savings. On the other hand, in the case of a much smaller tenant, it may be better to emphasize the non-financial benefits of a lighting upgrade, such as lighting-related improvements in productivity, or better illumination of merchandise or furnishings.

### ***Tenant-Initiated Negotiations***

A tenant that occupies space in a variety of locations is well-advised to bring the concepts presented in this appendix to the attention of each and every one of its landlords. Assume that a large retail clothing chain occupies space in 1000 locations nationwide. Assume

that this chain's stores look somewhat dated, that a capital improvement program to remedy the problem has been suggested by management, but that it has been delayed for lack of capital.

Assume that this chain systematically contacts each of its landlords. The chain volunteers to add language to each of its leases raising its rent in return for a new state-of-the-art energy-efficient lighting system that would reduce its electricity expenses. The retail chain highlights the financial benefits to be enjoyed by those landlords who cooperate.

It is likely that many of this chain's landlords would be anxious to fund these lighting improvements in return for increases in net operating income in their respective properties. As a result, a large portion of this retail chain's capital improvement program (i.e., the lighting upgrades) will be accomplished, with the up-front capital cost being borne by its landlords.

<b>SAMPLE LANDLORD FINANCIAL IMPACTS: NET LEASE</b>	
Typical Office Building	
Investment.....	\$1.00/sqft
Increase in Base Rent Received.....	\$0.21/sqft/yr
Increase in Asset Value.....	\$2.10/sqft

Assumptions: Lighting energy is 40% of electricity costs, and the lighting upgrade saves 50% of the lighting energy, yielding a 20% reduction in overall electricity cost. Base rent is increased by 60% of the electricity savings. Capitalization rate is 10%.

<b>SAMPLE TENANT OCCUPANCY COSTS: NET LEASE</b>			
Typical Office Building			
BEFORE	(\$/sqft/yr)	AFTER	(\$/sqft/yr)
Base Rent	\$17.50	Base Rent	\$17.71
Electricity	\$1.75	Electricity	\$1.40
Other Costs	\$6.00	Other Costs	\$6.00
<b>TOTAL</b>	<b>\$25.25</b>	<b>TOTAL</b>	<b>\$25.11</b>

Assumptions: Lighting energy is 40% of electricity costs, and the lighting upgrade saves 50% of the lighting energy, yielding a 20% reduction in overall electricity cost. Base rent increased by 60% of the electricity savings. Other costs include cleaning, repairs, maintenance, non-electric utilities, roads, grounds, and security.

## Assessments and Property Valuation

Many leases contain language that gives the landlord the right to assess tenants for capital improvements that will benefit all tenants. Landlords typically use this type of clause to assess tenants for energy-efficient lighting in common areas, because the resulting energy savings reduce all tenants' common area maintenance costs.

When capital improvements are paid for using this assessment mechanism, the improvement is usually amortized over a period of as long as 10 years, with monthly payments calculated to include an agreed upon rate of interest that covers the landlord for its cost of capital to fund the improvement. Each month during the amortization period, the tenants pay the base rent plus the monthly assessment for the improvement.

*Assessment clauses in the lease should be used to fund energy-related capital improvements only as a last resort, if at all.* Assessing tenants to pay for energy-efficiency improvements eliminates most of the opportunity for the landlord to capitalize the energy savings and create property value. From a net operating income standpoint, raising the tenant's rent by a large percentage of the resulting energy savings provides the owner with a significantly greater increased cash flow than collecting assessment payments that would amortize the improvement over ten years at a market interest rate.

Assessing a tenant for a lighting upgrade in its space *may* make sense if 1) the tenant is not interested in raising its rent in return for lower electricity bills, and 2) one assumes that the new lighting fixtures can be reused for the *next* tenant in that space. Using the assessment approach in this situation will assure that the lighting improvements are done, and the anticipated lower lighting energy expenses may be used to justify charging the next tenant in that space a higher base rent. This increase in base rent would raise the property's NOI (and the property's appraised value) at the time the upgraded space is occupied by the *new* tenant.

## LIGHTING UPGRADES FOR PUBLICLY TRADED TENANTS & REITS

Publicly traded tenants, Real Estate Investment Trusts (REITs), and other institutional real estate investors can also create value by leveraging the savings produced by improvements to lighting energy efficiency.

One approach that analysts/investors use to determine the market valuation of a company first divides the firm's dividends by an appropriate discount rate, and then adds the net present value of the firm's growth opportunities. If a company implements measures that reduce its energy bills in the spaces it occupies, the resulting reduction in expenses will increase the company's bottom line. This increased profitability will either be paid out in the form of higher dividends, or be reinvested in more growth opportunities. Either way, the company's market value will likely increase by a *multiple* of the net savings in annual energy expenses (because of the discounting procedure that translates *higher dividends* or *higher growth opportunities* into *higher company valuation*). Higher dividends can result in increases in shareholder value, just as higher net operating income can result in increases in income property value.

REITs are a special form of publicly traded security. Over the last few years, the commercial real estate market has seen an unprecedented level of securitization of real estate assets, as more and more public companies are formed for the purpose of acquiring, improving and reselling real property.

Industry analysts generally consider *Funds from Operations* (FFO) to be the most appropriate measure of performance of an equity REIT. FFO is defined by the National Association of Real Estate Investment Trusts (NAREIT) to mean net income (or loss) determined in accordance with Generally Accepted Accounting Principles (GAAP), excluding gains (or losses) from debt restructuring and sales of property, plus depreciation and amortization, and after adjustments for unconsolidated partnerships and joint ventures.

REITs operate in the same real estate environment as other landlords. Today, there are fewer opportunities for REITs to create value in their portfolios by simply raising "below market" rents at renewal time, or by reducing vacancy rates. Expense reduction, however, is a fertile opportunity to create value in these properties.

If a REIT invests in energy-efficient lighting upgrades for its properties, the result will be higher FFO. This is generally true even if the REIT borrows the capital to do the improvements, as long as the rate of return generated through energy savings is higher than the REIT's cost of capital. Any additional cash flow generated by reduced operating expenses can be used to 1) fund higher dividends (by law, a REIT must distribute 95% of its taxable income in the form of dividends to its shareholders), or 2) invest in additional opportunities that are projected to yield attractive returns. Either way, a REIT can transform its energy-efficiency-related increase in FFO into a higher share price.

With lines of credit, and access to public debt and equity markets, publicly traded tenants, REITs and other institutional real estate investors are well-positioned to fund the strategies outlined in this appendix. In fact, pursuing energy-efficiency opportunities in tenant spaces may one of the best ways to increase the valuation of their publicly traded shares.

# IDENTIFYING BENEFITS

## Quantifying Energy Savings

The cost of all proposed capital improvements and their projected energy savings should be reliably quantified. Reliable prediction of the costs and benefits of lighting retrofits is made easier with the technical data and assistance that are available from EPA Green Lights and other sources. There are several approaches available to calculate capital investments in lighting upgrades and the resulting savings.

### **Engineering Estimates**

Engineering estimates can be a relatively accurate way to project the energy savings of a proposed lighting-efficiency measure. Depending upon the percentage of savings the landlord intends to share with the tenant, an engineering estimate may provide the tenant with sufficient assurance that its negotiated rent increase will not exceed the actual reduction in electricity costs produced by the new lighting system. If engineering estimates are used to predict lighting energy savings, all assumptions used in the calculations should be checked for reasonableness by someone who is very familiar with the property being analyzed. For example, overestimating the hours of lighting system operation and other factors can cause the energy usage of the existing lighting configuration to be overstated. The end result will be inflated energy savings projections (and a dissatisfied tenant).

### **Submetering**

Submetering offers an additional assurance to the tenant that the projected energy savings were actually realized. However, depending upon the existing condition of the tenant's lighting circuits, this assurance may be costly. Some income-property owners use portable metering equipment, which can be moved from tenant space to tenant space as the lighting upgrades are designed and installed, and the savings are verified. If the tenant's lighting systems are not already on separate circuits, the cost of separate circuiting and metering should be investigated. As an alternative, the tenant's *overall* electricity use can be metered so that, assuming other tenant activities remain constant, the change in electricity use resulting from the new lighting equipment can be authoritatively identified.

### **Trial Installations**

A trial installation of a lighting system *with post-installation measurement and evaluation* is perhaps the simplest way to demonstrate the savings potential of an

energy-efficient lighting system. Installing energy-efficient lighting in one room or floor of a tenant's space may provide sufficient evidence that the proposed building-wide lighting retrofit will produce electricity savings in excess of the requested increase in rent.

### **Testimonials**

Once several tenants have experienced the new lighting system and have realized measurable occupancy cost reductions, their testimonials can be used to convince other tenants to participate in the upgrade program.

## Quantifying Financial Benefits

The *full* financial consequences of an energy efficiency-related capital improvement should be analyzed before subjecting the proposal to tests involving simple payback, IRR, or other measures. Numerous surveys have found that investors tend to require simple payback periods of three years or less in order to fund energy-efficient lighting improvements. However, when performing simple payback analysis, income property owners typically focus only on the *income statement*, not *property valuation*. This mistake is significant, because energy savings that reduce operating expenses also increase net operating income. Ignoring the resulting increase in real estate asset value may cause an investor to reject a worthwhile lighting-efficiency project.

In the case of retail income property, one important *indirect* benefit of a lighting-efficiency upgrade may be *higher percentage rents*. Increased productivity and other associated benefits of improved lighting may result in higher sales for retail tenants. As the tenant's sales increase due to lighting-related productivity increases, the landlord's percentage rents may increase as well, further improving the NOI of the property.

## Highlighting Other Benefits

### **Upgrades Can Attract New Tenants**

*Lower occupancy costs give an income property a marketing advantage, making it easier to attract new tenants (and to retain existing tenants).* In addition, prospective tenants will be attracted to the higher-quality illumination in both tenant spaces and common areas, which can suggest competent and professional management. Building finishes (like carpets and wall coverings) look more vibrant when illuminated under high-color-rendering lighting sources such as T8 fluorescent lamps. The leasing office itself should be equipped with high-quality, energy-efficient lighting to

demonstrate these concepts for existing and prospective tenants considering this upgrade.

### **Improved Relationships with Existing Tenants**

Any arrangement that shares the benefits of energy efficiency fosters improved landlord-tenant relations. The landlord and the property management staff are now heroes in the tenant's eyes. The tenant has not been asked for any assessment to pay for the retrofit. The suggested rent increase is *less than the electricity savings* enjoyed by the tenant. Improving the quality of the tenant's lighting can reduce the glare and flicker that cause headaches and eye strain, improving worker productivity overall, and perhaps even sales. Better tenant retention should result from implementing energy-efficient lighting upgrades. Any increased leasing and renewal activity produced by this approach substantially increases both the NOI and the capitalized value benefits of this program. If the creativity of this program encourages even one 10,000-square-foot tenant to renew its lease and occupy a space that would otherwise remain vacant, the entire rental stream of that tenant can be viewed as "increased NOI."

### **Eases CFC Refrigerant Phase-Out Constraints**

Improving the energy efficiency of a building's lighting system is another strategy for coping with reductions in HVAC system capacity caused by the use of non-CFC refrigerants. The new refrigerants that comply with CFC regulations can reduce the effectiveness of HVAC equipment by as much as 25%. Fortunately, reducing the lighting load also reduces the associated heat produced by lighting equipment, thereby reducing the cooling load on the building's HVAC equipment. Depending upon the building and existing HVAC system, this reduction in the "heat from light" may be significant enough to make it unnecessary to increase HVAC capacity after the new refrigerants are phased in.

### **Compliance with the Energy Policy Act of 1992**

A properly designed lighting retrofit assures that the landlord's property will comply with the lighting-efficiency mandates of the Energy Policy Act of 1992 (EPACT) once they are fully phased in. Many of these energy-efficiency measures will have to be done eventually anyway. Doing them early enables the landlord to harvest the energy savings and capitalize their effect on net operating income (and allows the tenants to benefit sooner as well). The new equipment may be fully paid for through energy savings by the time the new regulations become effective.

### **Compliance with Hazardous Waste Laws**

By handling the entire property's lighting upgrade, the landlord can control the replacement and proper disposal of PCB (polychlorinated biphenyl) containing ballasts and mercury-containing spent fluorescent lamps. This control reduces the possibility of improper disposal by the tenant that may result in having the landlord named as a "cogenerator" of hazardous waste at some point in the future.

### **Environmental Public Relations Benefits**

There are substantial public relations benefits to be had by implementing these types of energy-efficiency improvements. Commercial building owners and tenants are always looking for ways to be good citizens. Saving energy and reducing pollution are important parts of that effort.

#### **Benefits to Landlord:**

- ★ Increased net operating income
- ★ Increased asset value
- ★ Marketing advantage to attract new tenants
- ★ Increased retention of existing tenants
- ★ Reduced CFC refrigerant phase-out costs
- ★ Compliance with Energy Policy Act of 1992
- ★ Compliance with hazardous waste laws
- ★ Improved public relations
- ★ Improved relationships with tenants

#### **Benefits to Tenant:**

- ★ New lighting system provides
  - improved color rendering
  - improved aesthetics
  - improved visual comfort
  - reduced noise and flicker
  - proper light levels
- ★ Reduced occupancy costs
- ★ No investment in lighting system
- ★ Improved productivity, sales, and/or morale
- ★ Reduced lamp and ballast replacement costs

## VAST MARKET POTENTIAL FOR UPGRADING TENANT SPACES

It is estimated that there are more than 64 billion square feet of owned and leased commercial space in the United States. This estimate includes approximately 4.5 million buildings that are non-residential, non-agricultural, and non-industrial. The U.S. Department of Commerce includes the following uses in its tally of commercial buildings: retail and office, educational, hospitals, social and recreational, public, religious, and miscellaneous.

Approximately 20% of this 64 billion square feet of commercial space is government-owned. Of the non-government-owned space, approximately 63% is owner-occupied, while the rest is non-owner-occupied or income property. The percentage of building space that is non-owner-occupied varies by building use. While less than 10% of commercial building floor space for assembly or health services is leased or rented, it is estimated that 30% of office space is non-owner-occupied.

Office and retail spaces have larger percentages of leased space than the commercial building sector as a whole. Office and retail spaces also tend to have higher energy intensities (i.e., more energy use per square foot per year) than other commercial building uses. For these reasons, office and retail spaces are prime candidates for the strategies presented in this appendix.

Approximately 80-85% of the square footage in a typical income property is actually tenant space, as opposed to common areas. While data on the popularity of gross leases in the marketplace are unavailable, the large market for submetering equipment suggests that various forms of net leases are very popular.

Clearly, gross leases provide the easiest opportunity for landlords to create value using energy-efficiency improvements. However, energy savings can be harvested and used to create higher property values almost regardless of present leasing structure. If energy-efficiency improvements are limited to gross-leased space (and common areas), the majority of energy-efficiency opportunities in leased commercial spaces are lost.

## IMPLEMENTING LIGHTING UPGRADE PROJECTS

### Planning for Multi-Tenant Upgrades

Upgrading buildings that have multiple tenants will normally involve a sequential process of renegotiating one or more tenants' leases followed by the installation of upgrades to their space(s). A plan should be developed to convert the lighting systems of the largest, most influential, or most willing tenants first. Tenants who are more difficult to convince will then have a model to follow.

Tenant education and feedback is vital to maximizing satisfaction with lighting upgrades. To help achieve full tenant cooperation with the program, landlords should emphasize the benefits of increased productivity and morale, reduced pollution, and the financial benefits of the new lighting system.

Systematic implementation will assure the consistency and quality of installations. It will also minimize the diversity of replacement lamps and ballasts, and may even provide an economy of scale that will reduce the cost of the project overall.

### Developing Equipment Specifications

Developing equipment specifications that match Illuminating Engineering Society (IES) or other industry recommendations will avoid problems of inadequate or excessive illumination after the retrofits are completed. Correct specification reduces the possibility that tenants will be dissatisfied with the results of the retrofit.

Evaluating all energy-efficiency improvements from the viewpoint of systems interaction (and potential systems incompatibility) will avoid unforeseen expense and inconvenience. Power factor, electromagnetic interference, and harmonics are three important issues

that should be considered before embarking on a building-wide lighting upgrade project. Any sensitive equipment owned or operated by the tenants should also be investigated to assure that the new lighting system will not produce unintended interactions.

Providing a liaison with equipment vendors and installation contractors will streamline the retrofit process and maintain a conduit through which unforeseen difficulties can be addressed in a timely fashion.

## Measurement and Evaluation

Providing post-installation measurement and evaluation to document energy savings will satisfy tenants that their decision to participate in the upgrade program was a wise one. Data on pre- and post- installation electricity expenses will be useful in motivating other tenants to participate in the program, and for public relations efforts after the project is complete. This information is also useful to leasing personnel. Prospective tenants may want to see proof that the electricity savings produced by the new energy-efficient lighting system justify paying a higher base rent (i.e., that total occupancy costs will be the same or lower than those in a space without energy-efficient lighting).

## Meeting Tenant Needs

Conducting needs analyses with tenants to design effective upgrades will assure that the new lighting installation will generate more than just energy savings. Better quality lighting leads to higher productivity, which leads to happier tenants and, in retail environments, potentially higher sales. Understanding the needs of the tenants is vital to the success of this program.

“Hand-holding” throughout the process will ensure effective project implementation. Upgrades should be managed in a way that minimizes tenant inconvenience. A representative of the landlord should be available at all times to field questions from tenants regarding lighting renovations in progress.

## Communicating Success

Coordinating articles in tenant newsletters and industry trade journals will communicate your success in improving tenant spaces and common areas while helping to protect the environment. A successful lighting retrofit project, highlighted as a case study, is a valuable way to get publicity in your industry's trade journals as well as in the popular press that your tenants, colleagues and clients read. Including the

project as an EPA Green Lights success story is the first step on the road to this beneficial exposure.

## CONCLUSION

Given the opportunity to earn an excellent annual return on investment and create genuine property value, a landlord should be happy to pay 100% of the installed cost of energy-efficient lighting retrofits for its tenants. The resulting benefits of increased net operating income and increased appraised value make this type of investment one of the most profitable opportunities available to an income property owner in today's real estate market.

## CASE STUDY: THE 1528 WALNUT BUILDING, PHILADELPHIA, PA

Located in Philadelphia's Center City business district, the 1528 Walnut Building is operated by Philadelphia-based Amerimar Walnut Management Co., Inc. This 21-story commercial office building is an excellent example of how energy-efficiency improvements can benefit both tenants and landlords.

Like many other areas in the country, Philadelphia's downtown has become a very competitive leasing market. Tenants look beyond base rent per square foot, and carefully compare each building's amenities, estimated operating expenses per square foot, estimated common area maintenance charges, and other factors. Electricity expenses have become a particularly important topic in Philadelphia-area lease negotiations. Because of the way in which the local electric utility calculates demand charges, one kilowatt (kW) of peak period summer demand can increase a commercial customer's electricity bill by more than \$200 over the course of the following year.

In a highly competitive leasing market, it is difficult for a landlord to use *rent increases* to improve a building's net operating income. Faced with the challenge of increasing 1528 Walnut's net operating income (and its appraised value) without raising rents, Amerimar decided to use a two-part strategy: *increasing occupancy* and *reducing expenses*. When Amerimar initiated its comprehensive renovation and re-tenanting program for 1528 Walnut in March of 1992, *retaining existing tenants* was as important as *attracting new tenants*. By simultaneously *lowering tenant occupancy costs* and *improving tenant comfort and convenience*, Amerimar hoped to give 1528 Walnut an important competitive advantage over other local buildings seeking tenants.

Lighting upgrades (which were entirely funded by the landlord) were a significant part of this capital improvement program. Lighting upgrades in *submetered, net-leased spaces* enabled the landlord to give verifiable reductions in operating costs to its tenants. Lighting upgrades in *common areas* lowered all tenants' common area maintenance (CAM) bills. Moving toward energy-efficient lighting building-wide also reduced the landlord's own expenses by 1) lowering electricity costs in *gross-leased areas* where the landlord itself was responsible for lighting energy, and 2) reducing the landlord's costs for unreimbursed CAM expenses (i.e., the portion of CAM expenses allocated to vacant space and therefore absorbed by the landlord). According to John Smyth, Project Manager for 1528 Walnut, Amerimar had additional incentives to pursue this lighting upgrade program, including reduced labor and material expenses resulting from longer-lived components, and reduced building cooling load.

With the help of Philadelphia-based Energy Efficiency Funding Group, Inc. (EEFG), Amerimar has adopted new building standards for energy-efficient lighting. In common areas, recessed incandescent downlights are being replaced with cross-baffle compact fluorescent fixtures. Incandescent exit signs in both common areas and tenant spaces are being replaced with L.E.D. exit signs. In addition, most new tenant build-outs, including tenant improvements negotiated in the process of lease renewals, are specifying T8 lamps, electronic ballasts, halogen infrared PAR lamps, and compact fluorescent fixtures. Lighting energy-efficiency improvements installed thus far have yielded an electricity demand reduction of more than 41 kW. Since many of these improvements are being done at tenant build-out, the landlord is generating a large part of these energy savings at an incremental cost which is *less than the first-year payback of these measures*.

Since the beginning of 1528 Walnut's renovation and re-tenanting program, energy-efficiency improvements in lighting, HVAC and building envelope have resulted in a significant reduction in operating expenses per square foot for the tenants. The 1528 Walnut Building is a fine example of how proactive management can use landlord-specified and funded energy-efficiency upgrades to make an income property more competitive in a challenging leasing environment. This may be one reason that 1528 Walnut was honored with First Place in the Office Urban category of the 1994 Building Excellence Awards of the Delaware Valley, sponsored by Commerce Bank and the Philadelphia Business Journal.

# REFERENCE SECTION

## APPROACHES TO APPRAISING REAL PROPERTY

Appraisal is the process used to estimate the market value of a given piece of real estate. There are three commonly used approaches to estimating the value of real property: the *income* approach, the *market comparison* approach, and the cost approach. Each of these approaches to real estate appraisal is detailed below.

### Income Approach

The income approach to real estate appraisal sets the value of a property as the *present value* of benefits (i.e., income) that the property is expected to provide in the future to its owner. Using this approach, a property's value is calculated by dividing the expected *net operating income* by the property's overall *capitalization rate* (the rate of interest used to convert a series of future cash flows into a single present value).

A complete appraisal using the income approach would consider both the *income stream generated from rents during the holding period of the property, and the cash flow resulting from the sale of the property*. Additionally, an accurate estimate of cash flow at sale would include an analysis of principal reduction on the mortgage over the period of time the property was owned, appreciation (or depreciation) in value over the holding period, and selling expenses.

Dividing the *estimated net operating income for the first year after the property is sold* by an *estimated capitalization rate* is a simplified form of the income approach. This simplified form is sometimes used to check the proposed purchase price of a property for reasonableness.

While the income approach provides a reliable appraisal, a more comprehensive analysis of property purchase price would likely include a calculation of other financial measures such as the following: price per gross square foot, price per net square foot (i.e., price per rentable square foot), IRR (internal rate of return), adjusted IRR (internal rate of return modified to reflect a reinvestment rate lower than the IRR itself),

*net present value* (present value of all cash outflows subtracted from the present value of all cash inflows over the course of an investment), or profitability index (ratio of the present value of cash inflows to the initial equity invested assuming the investor's specified *discount rate*).

### Market Comparison Approach

Also called the "market data" or "direct sales comparison" approach, the market comparison approach is based on the principle of substitution. A property is presumed to be worth no more than what the market will pay for an equally desirable substitute. As a result, this method uses the sales prices of similar properties that were recently sold (i.e., "comparables"), and adjusts these sales prices to account for differences between the comparable properties and the property being appraised.

If the energy-efficiency measures recommended in this appendix were implemented in a given income property, an appraiser using the market comparison approach may increase the valuation of the subject property to reflect the fact that the recently sold properties used as "comparables" were less energy-efficient.

### Cost Approach

This appraisal method relies on the principle that no one will pay more for a property than the cost of building a property of equal utility or usefulness. The cost approach involves calculations based on precise construction costs and depreciation amounts, and is best used in situations when data required for the other approaches is lacking.

The net present value of energy-efficient lighting measures is far greater than initial cost less depreciation. By definition, the cost approach would grossly understate the financial benefits produced over the lifetime of an energy-efficient lighting upgrade.

## Selection of Appraisal Approach

Each of these three methods of real estate appraisal has benefits and limitations. For example, in order to use the income approach, the appraiser must estimate the future income stream, the reliability of which is only as good as the estimate of future appreciation and the estimate of changes in income from operations.

Another limitation of the income approach is that it produces an appraisal of real estate value that is very sensitive to the *capitalization* rate used. Nonetheless, the concepts offered in this appendix are based upon the income approach, because this method of appraisal is widely used and relied upon for estimating the value of income-producing properties. This appendix does not consider the market comparison and cost approaches in any detail.

In the interest of keeping this discussion of the income approach accessible to all readers, this appendix does not address cash flows that occur when the property is refinanced or sold. Rather, this appendix only considers the effect that *net operating income derived from rents* has on a property's value. On a similar note, because income properties vary considerably in the area of tax treatment, all concepts and examples in this appendix are presented on a *before-tax* basis.

## APPROACHES TO COMMERCIAL LEASING

While leases vary widely in their treatment of energy costs inside the tenant's space, most leases are a variation on one of three major approaches: net, gross, or fixed-base. The incentives and disincentives that landlords and tenants have to improve lighting energy-efficiency differ under each of these three leasing structures.

### Net Lease

A *net lease* defines energy costs within a tenant's space as the responsibility of the tenant. Electricity usage may be determined by submetering the tenant's space, or by an expense-allocation formula contained within the lease. In either case, electricity costs are added to the tenant's monthly rent, along with other utilities and operating costs.

In the case of a net lease, energy-efficient lighting improvements produce electricity savings for the tenant. If there is no mechanism to transfer that benefit to the landlord, the landlord is prevented from earning a fair return on any investment it may make in energy-efficient lighting equipment in the tenant's space.

There are a variety of reasons that tenants are not generally interested in installing energy-efficiency improvements in their spaces, even in the case of a net lease. *Lack of information about retrofit possibilities, lack of access to capital, inadequate length of the remaining term of the lease, and reluctance to invest in a property that the tenant does not own*, are just a few of the factors cited by tenants as disincentives to improving the lighting systems in their own spaces and enjoying the lower electricity bill that would result.

Certain net leases require the tenant to pay a percentage of the entire building's energy costs based upon the portion of square footage that the tenant occupies (or some other measure). In this case there is even more of a disincentive for tenants to invest in energy-efficient lighting. Unless provisions are made to assign the savings in building electricity costs to the tenant that installs the energy-saving lighting equipment, dilution of the resulting energy savings will prevent the tenant from earning a fair return on its investment.

### Gross Lease

A *gross lease* typically requires the landlord to pay for all building electricity. In this case, it makes sense for the landlord to pay for energy-efficient lighting upgrades in its tenants' spaces, because the landlord will realize a reduction in its own electricity bill.

Lower electricity costs resulting from the new energy-efficient lighting system can repay the landlord's investment in new lighting equipment for the tenant. It can also result in higher net operating income, which raises the appraised value of the landlord's property.

### Fixed Base Lease

A *fixed-base lease* is a gross lease with an upward limit on operating expenses including electricity. In a fixed-base lease, the tenant is only responsible for those electricity costs that are above a certain base level. A rise in electricity costs during the lease term could be the result of a utility rate increase, an increase in the tenant's electricity use, or a lease formula that changes the allocation of electricity costs between the landlord and the tenant under certain conditions.

Incentives for landlords and tenants to upgrade depend upon where the tenant's electricity usage is in relation to the fixed-base limit placed on electricity expenses. Furthermore, the incentive for either party to pay for an upgrade may *change* as a tenant's electricity usage approaches, and then crosses, the fixed-base limit defined by the lease. An example will be helpful in explaining these concepts.

Assume that a lease sets an annual fixed-base of \$1.00 per square foot for electricity costs, with the tenant absorbing all additional electricity expenses. Any energy-saving improvements funded by the landlord will reduce the landlord's electricity expenses as long as the tenant's energy use is *below* \$1.00 per square foot. Keep in mind, however, that these energy savings also postpone the time when the tenant begins sharing in the cost of its electricity (because electricity savings produced by the lighting retrofit will make the tenant that much less likely to exceed the \$1.00-per-square-foot fixed-base electricity level).

It may be wise for the landlord to proceed with the upgrade if the landlord believes that, *in the absence of a lighting upgrade*, the tenant will be at or below the fixed-base level set by the lease *for at least the entire period required for the landlord to recoup the cost of the upgrade*.

If, on the other hand, the tenant is already *above* the fixed-base level for electricity set by the lease, the *tenant* has an incentive to fund the energy-efficient lighting upgrade to avoid having to pay electricity costs that are above the fixed-base level.

In practice, these issues can be less than clear. In most cases, lighting energy usage is bundled with other operating expenses before it is billed to a tenant. Comparisons of lighting energy usage before and after retrofits are clouded by other factors that influence building operating expenses, such as tenant hours of operation, vacancy levels in the building, or even changes in weather that affect the energy used for building climate control.

## GLOSSARY OF TERMS

**Balance sheet:** Also called the "statement of condition" or "statement of financial position," the balance sheet shows the status of assets, liabilities, and owners' equity on a given date, usually the close of a financial period.

**Before-tax cash flow (BTCF):** Before-tax cash flow is the amount of income remaining after paying *debt service* and all *operating expenses*. BTCF is calculated by subtracting *debt service* from net operating income. Simply put, it is the income property investor's before-tax "profit."  $BTCF = NOI - DS$ .

**Capital expenditures (CE):** Capital expenditures are improvements to the property that have a useful life of more than one year. They are somewhat like repair and maintenance items, except that they generally involve a large expenditure and have a relatively long life. Room additions and significant energy-efficiency

upgrades are considered capital expenditures. A new roof would be classified as a capital expenditure, while a roof repair would likely be classified as repair and maintenance expense. Occasionally, the distinction between maintenance items and capital expenditures is not clear.

**Capitalization rate:** Rate of interest used to convert a series of future payments into a single present value. The capitalization rate is often referred to as the "cap rate."

**Common area maintenance (CAM):** Common areas include spaces that are used by all building occupants, such as elevator lobbies and the corridors connecting tenant spaces. Maintenance and operating expenses relating to these common areas are classified for tenant billing purposes as "common area maintenance charges," or more simply, "CAM."

**Debt service (DS):** Debt service is the amount of money required to "service the debt" on an investment. It is the total of all principal and interest payments for the year based on the mortgage on the property.

**Discount rate:** Sometimes called the "hurdle rate," the discount rate is the interest rate used in determining the *present value* of future cash flows. (When the income approach is used to appraise real property, the discount rate that is divided into the *net operating income* to determine the property's value is called the "*capitalization rate*.")

**Effective gross income (EGI):** The total amount of money the property can be expected to generate annually is the property's effective gross income. It is *potential gross income*, less *vacancy and bad debt expense*, plus *miscellaneous income*.  
 $EGI = PGI - VBD + MI$

**Fixed-base lease:** A gross lease with an upward limit on *operating expenses* (such as electricity) is typically referred to as a fixed-base lease. In a fixed base lease, the tenant is only responsible for those electricity costs that are above a certain base level. A rise in electricity costs during the lease term could be the result of a utility rate increase, an increase in the tenant's electricity use, or a lease formula that changes the allocation of electricity costs between the landlord and the tenant under certain conditions.

**Funds from operations (FFO):** Used when evaluating the performance of an equity REIT, FFO is generally considered to be net income (or loss) determined in accordance with Generally Accepted Accounting Principles (GAAP), excluding gains (or losses) from debt restructuring and sales of property, plus depreciation and amortization, and after adjustments for unconsolidated partnerships and joint ventures.

**Gross lease:** A property lease under which the landlord agrees to pay all expenses normally associated with ownership, such as insurance, taxes, utilities and maintenance, is generally referred to as a gross lease.

**Income statement:** Also called the “profit and loss statement” or “P & L,” the income statement is the summary of revenues, costs and expenses of an income property during a given accounting period. *Net operating income* is reflected on the *income statement*. The property valuation consequences of higher or lower *net operating income* would be reflected in an income-method appraisal of the property.

**Miscellaneous income (MI):** Any income other than rents, such as coin-operated vending machines, pay telephones, laundry facilities, parking spaces, and optional services to the tenants, is classified as miscellaneous income.

**Net lease:** A lease that specifies that the tenant is responsible for maintenance costs, taxes, insurance and other expenses (such as utilities) is generally referred to as a net lease.

**Net operating income (NOI):** The income remaining after all *operating expenses* have been paid is referred to as net operating income. NOI is calculated by subtracting *operating expenses* from *effective gross income*. Both *debt service* and return on investment are funded by a property's NOI.  
 $NOI = EGI - OE$ .

**Net present value (NPV):** The *present value of all cash outflows* subtracted from the *present value of all cash inflows* over the course of an investment is the investment's net present value.

**Net worth (NW):** The amount by which assets exceed liabilities is referred to as net worth. In the case of a corporation, net worth is also known as “stockholders' equity” or net assets.

**Operating expenses (OE):** Operating expenses are those cost items that are expended to generate rent from a property, such as real estate taxes, property insurance, utilities, management fees, advertising, supplies, workers' salaries, and repairs and maintenance.

**Percentage rents:** Some leases stipulate that the tenant shall pay the landlord a percentage of gross sales generated in the tenant's space in addition to the base rent per square foot. This portion of the tenant's gross sales that is paid to the landlord is classified as “percentage rents.”

**Potential gross income (PGI):** Potential gross income is the amount of rent that would be generated if the income property were rented at full occupancy for the entire year.

**Present value (PV):** Present value is the value today of a future payment, or stream of payments, discounted at some appropriate compound interest rate (i.e., *discount rate*). The present value method, also called the “discounted cash flow” method, is widely used in corporate finance to measure the profitability of a capital investment project.

**Vacancy and bad debt expense (VBD):** A prudent income-property investor usually estimates a percentage of *potential gross income* for vacancy and uncollectible rents.

## MODEL LETTERS BETWEEN LANDLORDS AND TENANTS

In some cases, the landlord will be the party who initiates the process of improving the lighting energy efficiency of its tenant's space. In other cases, a tenant may initiate this process. The following two model letters are provided to facilitate the first communication between a landlord and a tenant on this topic.

The Tenant-to-Landlord letter assumes that the tenant has engaged a consultant to survey the existing lighting configuration in the leased space, that the consultant has furnished the tenant with a report that estimates the savings that would result from installing a more energy-efficient lighting system, and that the tenant desires the cooperation of the landlord in purchasing and installing the new lighting equipment.

The Landlord-to-Tenant letter assumes that the landlord is interested in improving the lighting energy efficiency of its tenant's space, that at least a preliminary study has been conducted by the landlord's energy-efficiency consultant, and that the landlord desires the tenant's cooperation so that a mutually beneficial lighting upgrade can be designed, funded and completed.

Both letters contain alternative paragraphs to make them appropriate for use with most net or fixed-base leases. Similarly, alternative paragraphs are furnished to accommodate tenants who wish to pay for the lighting improvements themselves, and tenants who wish to have the landlord fund the lighting improvements in exchange for increased rent.

The model letters provided below may not be appropriate for certain leases. One such exception is a multiple-tenant building where tenants share operating expenses proportionately based on the percentage of building square footage that each tenant occupies. Landlords and tenants with multi-tenant expense-sharing arrangements in their leases are advised to read the section on multi-tenant buildings included under "Model Lease Clauses." Generally speaking, any landlord or tenant whose lease involves unusual or complicated expense-sharing calculations should consider seeking the advice of a consultant and/or attorney who is familiar with negotiating energy-efficiency improvements in leased spaces.

## MODEL LETTER FROM TENANT TO LANDLORD

[date]

Landlord  
[address]

Re: Lease ("Lease") dated \_\_\_\_\_, 19\_\_\_\_, between  
\_\_\_\_\_ ("Landlord") and \_\_\_\_\_ ("Tenant")

Dear [Landlord or Landlord Agent]:

### **[Alternative No. 1 - Net Lease where Tenant pays all electricity costs]**

[Under our Lease, we are responsible for the cost of electricity usage in our space. Since lighting constitutes a significant portion of this electricity usage, we have decided to target lighting energy-efficiency improvements as a strategy to reduce our electricity expenses.]

### **[Alternative No. 2 - Fixed-base lease where Tenant pays all electricity costs over a "stop" or "base year" expense amount, and such costs are not proportionately shared with other tenants]**

[Under our Lease, we are obligated each year to pay for our share of the escalation in operating costs of the building over those costs incurred to operate the building in the base year of 19\_\_\_\_. In the last calendar year, electricity costs for our leased premises exceeded base-year electricity costs by \$\_\_\_\_. We believe that the Landlord and the Tenant will benefit if overall operating costs for the building are reduced.]

We have consulted \_\_\_\_\_ ("Consultant"), a firm experienced in the evaluation of lighting and electrical systems for commercial properties. Our Consultant has advised us that the electricity used for lighting our leased premises can be reduced by approximately \_\_\_\_%, and that the quality of our lighting can be improved, if the existing lighting equipment in our premises is replaced with more energy-efficient equipment. We have enclosed a copy of this Consultant's report, which states the annual electricity cost savings that can be expected if this new lighting equipment is installed in our leased premises.

Based on the Consultant's report, it is estimated that the installation of new lighting equipment in our premises will reduce our electricity costs by \$.\_\_\_ per rentable square foot. Obviously, it is in our interest to reduce the amount we pay for electricity, and to improve the quality of lighting in our premises. Accordingly, we would like to propose for your consideration a mutually beneficial arrangement under which our existing lighting equipment will be replaced with more energy-efficient equipment.

Our proposal is

### **[Alternative No. 1 - Tenant pays for lighting upgrade]**

[that you consent to our removal of the existing lighting equipment in our space, and to our replacement of that equipment with the more energy-efficient variety recommended by the Consultant in its report. We will pay for all costs of removing the existing equipment and replacing it with the new equipment. This lighting upgrade will be beneficial to you in that the leased premises will be both more energy-efficient and better-illuminated, thereby making our space more attractive to us and to future tenants who may lease such premises.

Assuming that you are willing to consent to our upgrading the lighting in our leased premises, we will promptly commence the removal of the existing equipment and the installation of the new equipment, all of which work will be done in accordance with the requirements in the Lease relating to alterations and modifications of the leased premises by the Tenant.

Please feel free to contact us with any questions or comments you may have. We thank you in advance for your prompt attention to this matter.]

**[Alternative No. 2 - Landlord pays for lighting upgrade]**

[that the Landlord, at its cost, remove the existing lighting equipment and install more energy-efficient lighting equipment in accordance with the specifications recommended by our Consultant in its report. In turn, we are willing to amend the Lease to increase the rent in exchange for the Landlord incurring and paying the cost of this lighting upgrade.

As noted above, our Consultant has advised us in its report that this upgrade is estimated to produce annual electricity savings of \$.\_\_\_ per rentable square foot of the leased premises, or approximately \$\_\_\_ per lease year.

We are willing to enter into an amendment of the existing Lease which will increase our rent through the end of the lease term by \_\_\_% of the estimated savings in electricity costs that our Consultant projects will result from installing this new energy-efficient lighting equipment. This will increase the rent by \$.\_\_\_ per rentable square foot per year. This increase is not contingent on any future anticipated savings being achieved; rather, we, as Tenant, will be assuming this risk.

Upgrading the lighting in our space and increasing our rent in the manner described above will provide many benefits to the Landlord. First, when considered in relation to the estimated cost of the lighting upgrade, our proposed rent increase represents a return to the Landlord of more than \_\_\_% per year. Second, this improvement to the leased premises will result in a higher rent roll, thereby increasing the value of the building if it were to be sold or refinanced in the future. For example, if the building's rent roll and net operating income increase by \$\_\_\_ per year, and if the building's appraised value is its net operating income divided by a capitalization rate of 10%, the Landlord's investment in improving the Tenant's space should result in a \$\_\_\_ increase in appraised property value. Third, the lighting upgrade will make our leased space more attractive to us, and to potential future tenants, because of the better-quality lighting, and because of the reduction in electricity expenses resulting from the increased lighting energy-efficiency. Fourth, this lighting energy-efficiency improvement has the societal benefit of lowering overall electricity consumption, thereby reducing the air pollution caused by electricity generation. Overall, we believe that improving the energy-efficiency of the lighting in our premises in this manner produces a "win-win" situation for the Landlord and the Tenant.

We have enclosed a proposed amendment to our Lease to cover the lighting upgrade and the adjustment in the Tenant's rent obligation. Please review the enclosed Consultant's report and lease amendment, and let us know if you have any questions or comments.]

Very truly yours,

[Tenant]

## MODEL LETTER FROM LANDLORD TO TENANT

[date]

Tenant  
[address]

Re: Lease ("Lease") dated \_\_\_\_\_, 19\_\_\_\_, between  
\_\_\_\_\_ ("Landlord") and \_\_\_\_\_ ("Tenant")

Dear [Tenant or Tenant Agent]:

As your landlord, we are always interested in pursuing opportunities to decrease building operating expenses and improve tenant comfort and convenience. After considerable research and planning, we have decided to embark on a systematic program of upgrading the lighting systems of [building name]. Both tenant spaces and common areas will be included in this program to improve energy efficiency and lighting quality.

### **[Alternative No. 1 - Net Lease where Tenant pays all electricity costs]**

[Under your Lease, you are responsible for the cost of electricity usage in your space. Since lighting constitutes a significant portion of this electricity usage, we believe you will be interested in our plans to use lighting energy-efficiency improvements as a strategy to reduce your electricity expenses.]

### **[Alternative No. 2 - Fixed-base lease where Tenant pays all electricity costs over a "stop" or "base year" expense amount, and such costs are not proportionately shared with other tenants]**

[Under your Lease, you are obligated each year to pay for your share of the escalation in operating costs of the building over those costs incurred to operate the building in the base year of 19\_\_\_\_. In the last calendar year, electricity costs for your leased premises exceeded base-year electricity costs by \$\_\_\_\_. We believe that the Landlord and the Tenant will benefit if overall operating costs for the building are reduced.]

We have consulted \_\_\_\_\_ ("Consultant"), a firm experienced in the evaluation of lighting and electrical systems for commercial properties. Our Consultant has advised us that the electricity used for lighting your leased premises can be reduced by approximately \_\_\_\_%, and that the quality of your lighting can be improved, if the existing lighting equipment in your premises is replaced with more energy-efficient equipment. We have enclosed a copy of this Consultant's report, which estimates the annual electricity cost savings that can be expected if new lighting equipment is installed in your leased premises.

Based on the Consultant's report, it is estimated that the installation of new lighting equipment in your premises would reduce your electricity costs by \$.\_\_\_ per rentable square foot. Obviously, it is in your interest to reduce the amount you pay for electricity, and to improve the quality of lighting in your premises. Accordingly, we would like to propose for your consideration a mutually beneficial arrangement under which your existing lighting equipment will be replaced with more energy-efficient equipment.

Our proposal is

### **[Alternative No. 1 - Tenant pays for lighting upgrade]**

[that you consent to our removal of the existing lighting equipment in your space, and to our replacement of that equipment with the more energy-efficient variety recommended by the Consultant in its report. You will pay for all costs of removing the existing equipment and replacing it with the new equipment. In order to compensate the Consultant and the Landlord for their work in supervising the design and installation of this lighting upgrade, you will also be asked to pay an additional amount that is equal to \_\_\_\_% of the cost of labor and materials for this project. As stated in the Consultant's report, it is estimated that your investment in this energy-efficient lighting upgrade will generate a return of \_\_\_\_% per year, making it a very attractive proposal for you to fund. This lighting upgrade will also be beneficial to you in that the leased premises will be better-illuminated.]

Assuming that you are willing to consent to our upgrading the lighting in your leased premises, we will promptly commence the removal of the existing equipment and the installation of the new equipment, all of which work will be done in accordance with the requirements in the Lease relating to alterations and modifications of the leased premises by the Landlord.

Please feel free to contact us with any questions or comments you may have. We look forward to helping you make a wise investment in lighting energy efficiency.]

**[Alternative No. 2 - Landlord pays for lighting upgrade]**

[that the Landlord, at its cost, remove the existing lighting equipment and install more energy-efficient lighting equipment in accordance with the specifications recommended by our Consultant in its report. The Landlord will also be responsible for all costs relating to the Consultant's lighting upgrade design, and for any and all project management expenses relating to this program. In turn, we are willing to amend the Lease to increase the rent in exchange for the Landlord incurring and paying the cost of this lighting upgrade.

As noted above, our Consultant has advised us in its report that this upgrade is estimated to produce annual electricity savings of \$.\_\_\_ per rentable square foot of the leased premises, or approximately \$\_\_\_ per lease year.

We are willing to enter into an amendment of the existing Lease which will increase your rent through the end of the lease term by \_\_\_% of the estimated savings in electricity costs that our Consultant projects will result from installing this new energy-efficient lighting equipment. This will increase the rent by \$.\_\_\_ per rentable square foot per year.

Upgrading the lighting in your space and increasing your rent in the manner described above will provide two significant benefits to you as the Tenant. First, you will be receiving a new lighting system with state-of-the-art, energy-efficient components, without any up-front capital cost. Since the proposed rent increase is less than the estimated energy savings generated by these improvements, you should see a decrease in overall occupancy costs for your space. Second, the new lighting components we will be installing provide higher-quality illumination. This lighting upgrade will, therefore, make your space more attractive.

We, as the Landlord, benefit from this arrangement as well. First, helping you lower your overall occupancy costs is a way of saying "Thank You" for being a loyal tenant in our building. Second, moving dollars you would have been paying for electricity into dollars you pay for rent has a desirable effect on our property's rent roll.

Finally, the environment benefits from our mutual cooperation in this project. Saving electricity reduces the air pollution caused by electricity generation.

Clearly, the process of harvesting energy-efficiency opportunities in your space, and sharing the savings in electricity expenses that result, produces a "win-win" situation for the Tenant, the Landlord, and the environment.

We have enclosed a proposed amendment to your Lease to cover the lighting upgrade and the adjustment in the Tenant's rent obligation. Please review the enclosed Consultant's report and lease amendment, and let us know if you have any questions or comments.]

Very truly yours,

[Landlord]

## MODEL LEASE CLAUSES

Below is a list of leasing situations that are addressed by the model lease clauses that follow.

- I. New lease whereby the tenant build-out is to be done before the tenant moves in:
  - A. Substantial build-out.
  - B. Simple lease form.
- II. Negotiated amendments to existing lease, including full utility pass-through (net lease), or pass-through of increases over a "stop" or "base" year expense amount (fixed-base lease):
  - A. Tenant's electricity cost is not included in any definition of operating expenses in the lease.
  - B. Electricity is submetered to each tenant.
  - C. Tenant pays for electricity as part of operating expenses, which are not shared proportionately among tenants.
  - D. Multiple-tenant building with operating expenses shared among tenants based upon space occupied.

## New Leases

New leases offer the easiest opportunity to ensure that the lighting systems in leased spaces are energy-efficient.

This clause is appropriate for use in a new lease where a substantial tenant build-out is to be completed before the tenant commences occupancy.

Tenant's Lighting Systems to Comply With Building Energy Standards. Attached to this Lease as Exhibit " " are Landlord's requirements for lighting systems to be installed in the Premises. All lighting systems selected or specified by Tenant which are to be installed in the Premises as part of the Tenant Work shall comply with the energy-efficiency requirements set forth in Exhibit " ". If Landlord modifies the lighting system energy-efficiency requirements for the Building after the date of this Lease, new lighting systems installed in the Building by Tenant or for use by Tenant shall comply with Landlord's then current lighting system requirements. Tenant's Plans and Specifications submitted to Landlord under the provisions of this Lease shall contain sufficient detail so that Landlord may confirm that the lighting systems to be installed in the Premises are in compliance with the requirements set forth in this section. Landlord may waive the lighting system requirements in Landlord's discretion. [It is presumed that other sections of the lease will require that the Tenant Work and any subsequent alterations or modifications to the Premises comply with all applicable laws and requirements of Governmental Authorities, including any energy-efficiency requirements.]

This clause may be more appropriate for use in simpler forms of new leases, which are typically used in the leasing of smaller buildings.

All lighting systems installed in the Premises must comply with all applicable legal requirements of local, state and federal governmental authorities and with

[name ASHRAE or other technical lighting standard, "as same may be modified from time to time."]

["Landlord's lighting system requirements for the Building, a copy of which is attached as Exhibit " "."]

["Landlord's lighting system requirement that lighting power density does not exceed \_\_\_\_ watts per square foot."]

## Existing Leases Where Tenant is Responsible for Measured Electricity Use

The following amendment to an existing lease may be used in cases where the tenant pays for electricity (either directly or through an operating expense clause), and the tenant's electricity expenses are known (e.g., the tenant's electricity is submetered or billed directly to the tenant by the utility provider, or the tenant is the sole occupant of the building). Three variations of subparagraph "d." are provided to cover the different situations where the tenant pays for electricity directly to the utility provider, or to the landlord for submetered electricity, or to the landlord as part of the operating expenses payable by the tenant.

### Landlord and Tenant to Share Cost Savings from New Lighting Systems.

a. During the Lease term Landlord may enter the Premises for the purpose of installing a new lighting system in the Premises, which lighting system may consist of light fixtures, ballasts, reflectors, lamps and other components. All costs of installing and lamping this new lighting system (the "New Lighting System") shall be paid for by Landlord.

b. Not less than thirty (30) days before commencement of installation of the New Lighting System Landlord shall deliver to Tenant a detailed description of the New Lighting System along with a certification ("Certification") prepared by a licensed Professional Engineer (P.E.), Certified Energy Manager (C.E.M.), or Certified Lighting Efficiency Professional (C.L.E.P.), certifying the estimated monthly and annual energy cost savings (the difference between the energy cost of the existing lighting system in the Premises and the projected energy cost of the New Lighting System) anticipated to be received over the twelve-month period following the installation of the New Lighting System ("Cost Savings"). The Certification shall be based upon disclosed assumptions or direct measurement in determining the energy cost of the existing lighting system and shall be based upon disclosed assumptions and published specifications (or

specifications approved by appropriate Federal or state governmental authorities) in determining the projected energy cost of the New Lighting System.

This optional language may be added to subparagraph "b." to permit the tenant to challenge the landlord's certification of cost savings.

[Within fifteen (15) days after receipt of Landlord's Certification, Tenant may deliver to Landlord a Certification prepared by a P.E., C.E.M. or C.L.E.P., selected and paid by Tenant. If Tenant does not deliver such a Certification from Tenant's P.E., C.E.M. or C.L.E.P., or if Tenant's Certification does not certify that anticipated monthly and annual energy savings from the New Lighting System will be 10% or more lower than certified by Landlord's P.E., C.E.M. or C.L.E.P., then the anticipated monthly and annual energy cost savings shall be as stated in Landlord's Certification. If Tenant's P.E., C.E.M. or C.L.E.P. certifies that the anticipated monthly and annual cost savings will be 10% or more lower than Landlord's Certification, the Cost Savings shall be the average of the Tenant's Certification and the Landlord's Certification, unless otherwise agreed by the parties.]

c. After the Cost Savings are determined, Landlord, at its option, may proceed with the installation of the New Lighting System, in accordance with the description given to Tenant with Landlord's Certification. Landlord may substitute reasonably equivalent fixtures or other components. Once commenced, Landlord promptly shall complete installation of the New Lighting System. Landlord shall make reasonable efforts to minimize interference with Tenant's business during the installation, but Landlord may perform such work during normal business hours.

This version of subparagraph "d." is appropriate in leasing situations where the tenant's electricity cost is not included in any definition of operating costs, as in the case where the tenant pays its own electricity costs directly to the utility provider.

d. Commencing on the first day of the first month following the completion of installation of the New Lighting System in the Premises, and continuing throughout the remainder of the term of the Lease and any renewal term(s), Tenant shall pay to Landlord as Additional Rent \_\_\_\_\_ percent (\_\_\_%) of the annual Cost Savings in equal monthly installments.

This optional version of subparagraph "d." may be used with a lease where the tenant pays for submetered electricity.

[d. Tenant currently pays for its submetered electricity consumed in the Premises. Commencing on the first day of the first month following the completion of installation of the New Lighting System in the Premises, and continuing throughout the remainder of the term of the Lease and any renewal term(s), Tenant shall pay to Landlord as Additional Rent \_\_\_\_\_ percent (\_\_\_%) of the annual Cost Savings in equal monthly installments. Such payment will be in addition to Tenant's payment for submetered electricity consumed in the Premises.]

This optional version of subparagraph "d." may be used with a lease where the tenant pays for operating expenses (or increases in operating expenses), and other tenants do not share operating expenses proportionately.

[d. Operating Expenses payable by the Tenant under this Lease shall include an amount equal to \_\_\_\_\_ percent (\_\_\_%) of the annual Cost Savings. Cost Savings shall be prorated for the year in which the New Lighting System is installed in the Premises.]

## Multi-Tenant Buildings with *Shared* Operating Expenses

Sharing energy cost savings between a landlord and its tenants is perhaps most challenging in the case of a multiple-tenant building in which operating expenses are shared among tenants based upon space occupied. In the typical lease of this type, the landlord calculates an operating expense figure each year, which includes all electricity consumed in the building. This operating expense figure is then compared with operating expenses for a certain base year which is specified in the lease. Sometimes these operating expenses are expressed as a *cost per square foot of building area*, in which case they are compared with the expense "stop," or fixed amount per square foot, which is specified in the lease. If the operating expenses in the current lease year are greater than the operating expenses set in the base year (or greater than the expense "stop"), each tenant pays a share of the increase (or excess over the expense "stop") according to the number of building square feet the tenant occupies.

If the landlord installs energy-efficient lighting fixtures in a tenant's space, the operating expenses for the building as a whole will be lowered, and all tenants will benefit by paying a lower escalation amount in the next lease year. The portion of these savings that is actually enjoyed by the tenant receiving the new lighting system depends upon the *relative proportion of building square footage occupied by that tenant*. The balance of the savings will be enjoyed by all the other tenants in the building. The smaller the tenant is in relation to other tenants in the building, the smaller its portion of the overall electricity bill reduction. For example, assume that a landlord invests in energy-efficient lighting for a tenant that occupies only 10% of the building's square footage. Even if the tenant were willing to convert 100% of its small share of the electricity cost savings into higher rent, the landlord would only receive a rent increase equal to 10% of the anticipated energy savings produced by the new lighting system. The other 90% of the savings would be enjoyed by the other tenants, none of whom agreed to a rent increase. In this scenario, the landlord would not be able to recoup its investment in energy-efficient lighting within an acceptable time frame.

This problem may be overcome by having all of the building's tenants agree that the landlord will retain a portion of the energy savings created by the installation of new lighting fixtures in one tenant's space, and that the tenants who have not been refixed will not share in the savings generated by the refixturing. The landlord may facilitate this negotiation with its tenants by promising to upgrade all tenants' spaces with new lighting fixtures over a specified period of time. This negotiating strategy is most effective where 1) the landlord has budgeted adequate capital to upgrade all tenant spaces in the building, and 2) the tenants agree to the timing of the installation of new lighting for each tenant. If this approach to upgrades is used, any tenant refusing to cooperate with the lease

amendment benefits at the expense of the other tenants, because the uncooperative tenant sees its operating expenses fall as a result of energy-efficient lighting upgrades in other spaces in the building.

### ***Using Capital Outlay Assessments for Uncooperative Tenants in Multi-Tenant Buildings***

Using assessments, the landlord may be able to recoup part of its investment in new lighting equipment by imposing the capital cost of these improvements on the uncooperative tenants. Most leases contain clauses that allow the landlord to recover from its tenants any capital outlays the landlord makes for cost-saving equipment. The capital outlays are usually not charged to the tenants in the year in which the capital outlays are incurred by the landlord. Rather, leases usually require these capital outlays to be amortized over some period of time, and the amortization often includes some interest factor to account for the landlord's cost of capital. An assessment clause typically permits the landlord to add the amortized cost of the capital equipment to the tenants' operating expenses. As long as the cost-saving improvement lowers the tenants' operating expenses by more than the increase caused by the assessment, the tenants should be pleased. While this type of assessment can be useful in dealing with uncooperative tenants, landlords should be aware of the following four considerations before using this strategy.

First, the landlord may have to amortize these capital outlays over a period longer than the remaining term of the uncooperative tenant's lease. Depending on market conditions, the landlord may not be able to preserve the increase in rental income (i.e., the amount of the monthly assessment charge) after the uncooperative tenant vacates and the space is leased to a new tenant. Furthermore, if the new tenant requires the landlord to install new fixtures as part of the new tenant's build-out, the energy-efficient fixtures will be removed before they have been fully amortized by assessment payments.

Second, assuming a reasonably long amortization period (e.g., ten years), an assessment levied on an uncooperative tenant actually allows that tenant to enjoy a greater benefit than the tenant would have received if the tenant had agreed to increase its rent in return for lower electricity bills. An example is helpful in explaining this concept. Assume that a landlord invests \$1.00 per square foot for an energy-efficient lighting upgrade that generates \$0.35 per square foot per year in electricity savings. If the tenant gives the landlord 80% (i.e., \$0.28) of the electricity reduction in the form of a rent increase, the tenant retains an electricity savings of \$0.07 per square foot per year, and the landlord recoups its \$1.00 investment in less than four years. If, on the other hand, an assessment is used, and the \$1.00 is charged to the uncooperative tenant as an operating expense increase over a ten-year amortization schedule, the uncooperative tenant receives the benefit of the entire \$0.35 per square foot per year in electricity cost reduction, and the landlord recoups its capital outlay over ten years. This is assuming the lease remains in effect for that entire period.

Third, certain leases contain language that limits the landlord's right to make assessments for capital improvements that are for tenant build-out, or that benefit one or only a few tenants. Such language may prevent the landlord from installing cost-saving capital improvements in one tenant's space, and charging the cost to all tenants as an operating expense. This lease language could be invoked by uncooperative tenants even though the savings resulting from improving the energy-efficiency of *any* tenant's lighting would benefit *all* tenants (because it would lower the building's overall electricity bill, which is shared by all tenants).

Fourth and finally, the landlord may have a problem getting a tenant with greater-than-average electricity usage to agree to any energy-savings-sharing arrangement that will expose the heavy electricity user to paying its actual electricity costs. This is because proportional expense sharing based on square footage typically allows a heavy electricity user to pass a portion of its higher-than-normal electricity costs per square foot to other tenants in the building. Any attempt to monitor or submeter other tenants will tend to isolate the heavy user and cause the heavy user to absorb a more realistic (i.e., less subsidized) portion of the electricity costs of the building. Similarly, the heavy electricity user has no incentive to permit its own space to be submetered. It may be possible to submeter just the lighting circuits of the heavy electricity user. However, even in that case, the tenant may be a heavy user of lighting energy per square foot because of higher illumination levels (e.g., retail space on the ground floor of an office building), or longer-than-normal operating hours.

The following form of amendment assumes that the landlord does not run into the above problems, or that it has found a way to overcome those problems. This lease amendment allows the landlord to make a deal with one tenant to refixture the tenant's space and share energy savings from the refixturing by submetering the tenant's actual usage. The amendment then removes from the tenant any obligation to pay a proportionate share of electrical energy costs for the building as a whole, other than common area electricity costs, which would still be shared. This amendment solves the multi-tenant sharing problem for the tenant receiving the upgrade, but other tenants in the building still obtain a benefit. As long as the other tenants' leases compute building electricity costs in accordance with the old definitions of *operating expenses* and *base year operating expenses*, their electricity costs will fall as a result of the new lighting system in the tenant's premises. This misallocation of energy savings may be prevented if 1) the *submetered usage of the tenant receiving the lighting upgrade* can be separated from *overall building electricity costs*, and 2) the percentage share of overall building electricity costs for each of the other tenants can be appropriately increased. (As discussed above, the landlord may also be able to ameliorate this problem to some extent by making use of a capital improvement pass-through in existing leases to pass through to *all* tenants the cost of a new lighting system in *one* tenant's space. However, as explained above, this may not be permitted because the new lighting system only benefits the tenant receiving the upgrade, rather than the building or all tenants generally.)

This form of lease amendment is designed to permit the tenant and the landlord to share in cost savings in situations where the tenant is currently sharing operating expenses with other tenants in the building.

Landlord and Tenant to Share Energy Cost Savings from New Lighting System.

a. Under the Lease Tenant pays a proportionate share of Operating Expenses [or increases in Operating Expenses]. These Operating Expenses include electricity consumed by tenants in the Building [building of which the Premises are a part]. Landlord is willing to install a new energy-efficient lighting system in the Premises, which lighting system may consist of light fixtures, ballasts, reflectors, lamps and other components, and Tenant is willing to have its electrical usage in the Premises submetered so that Landlord and Tenant may share the savings in electricity costs arising from the installation of the new lighting system. Landlord may enter the Premises for the purpose of installing a new lighting system in the Premises, which lighting system may consist of light fixtures, ballasts, reflectors, lamps and other components. All costs of installing and lamping this new lighting system (the "New Lighting System"), and all costs of submetering the Premises, shall be paid for by Landlord. The Lease is amended to remove from the definitions of Operating Expenses and Base Year Operating Expenses all electricity, other than electricity used in or servicing Common Areas of the Building.

[The language used above in subparagraphs "b." through "d." would then be used to cover the determination of Cost Savings, the installation of the New Lighting System, and the sharing of Cost Savings between the Landlord and the Tenant.]

## **Acknowledgments**

This appendix was authored by Mark T. Jewell, President of the Energy Efficiency Funding Group, Inc. (EEFG), at the request of the Environmental Protection Agency. EEFG is a Philadelphia-based consulting firm specializing in the design, evaluation, financial analysis and implementation of energy-efficiency improvements in both owner-occupied and income properties. Mr. Jewell is a Surveyor Ally with the EPA Green Lights Program.

The model lease clauses offered in this appendix were drafted by EEFG's real estate counsel, Stephen M. Foxman, Head of the Real Estate Department for Connolly Epstein Chicco Foxman Engelmyer & Ewing, of Philadelphia.

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For more information contact the Green Lights program office.

Green Lights Program  
US EPA  
401 M Street, SW (6202J)  
Washington, DC 20460

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*Upgrading Tenant Spaces* is an appendix to the *Lighting Upgrade Manual*. Other documents in the Manual are Listed below.


#### ***Lighting Upgrade Manual***

##### **PLANNING**

- *Green Lights Program*
- *Implementation Planning Guidebook*
- *Financial Considerations*
- *Lighting Waste Disposal*
- *Progress Reporting*
- *Communicating Green Lights Success*

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- *Lighting Fundamentals*
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- *Lighting Maintenance*
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