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ING Clarion Partners is presently pursuing energy efficiency opportunities throughout its investment portfolio, which includes Chevron Texaco Heritage Plaza, a 1.1 million ft<sup>2</sup> office tower in Houston.

## WINNING WITH EFFICIENCY IN INCOME PROPERTY BUDGETS

BY MARK JEWELL

**I**t's budget time once again for real-estate investors across the country deciding how to allocate their precious capital for next year. Knowing whether an upgrade makes sense, who should pay for it, and who might benefit is usually much more complicated for income-property owners than for owner-occupants.

In the latter case, the party that pays for the upgrade captures all of the savings. Income properties face additional challenges, including:

- allocating costs and savings between owner and tenants
- predicting how shifts in building use and occupancy might change project economics
- valuing how the owner's share of savings would affect the property's appraisal.

In large income-producing real estate portfolios, capital budgeting involves portfolio managers, asset managers, property managers, building engineers, energy managers, and others. These personnel play different roles in the process. Portfolio managers handle the high-level allocations of capital between various investment sectors. Asset managers work to improve portfolio

value by recommending which specific properties to buy, sell, improve, or reposition, and property managers handle day-to-day building operations. Building and energy managers perform their usual duties. These different roles provide different perspectives on energy.

Lack of clear communication between stakeholders is one of the biggest reasons worthwhile energy projects don't get the funding they deserve. While the engineers are talking "therms" and "kilowatts" the people with the checkbook are making decisions based on "capitalization rates" and "net present values."

### Six Steps

There's no better time than budget season to begin taking a more rational approach to using energy efficiency to create value in income properties. The following six steps provide a good foundation:

- Establish consensus on the organization's investment criteria
- Clearly communicate those criteria to each player in the decision-making hierarchy
- Develop a quick and inexpensive screening system to locate and rank upgrades

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## Before Tax Cash Flow

	Potential Gross Income
-	Vacancy and Bad Debt Allowance
+	Miscellaneous Income
=	Effective Gross Income
-	Operating Expenses (owner's share)
=	Net Operating Income
-	Debt Service
=	Before-tax Cash Flow from Operations

In this example, a \$1.00/ft<sup>2</sup> upgrade with -3-year simple payback period supports \$3.50/ft<sup>2</sup> in higher asset value.

## Income Approach to Appraisal

$$\frac{\text{Net Operating Income}}{\text{Capitalization Rate}} = \text{Asset Value}$$

$$\frac{\$0.35 \text{ ft}^2/\text{year}}{\%10} = \$3.50/\text{ft}^2$$

• Advance to more detailed stages of analysis with those properties/projects that score highest in the preliminary screening

• Take the time to calculate how the engineering benefits of a proposed upgrade would translate into financial benefits for the real-estate investor

• Research and pursue rebates and other incentives to help pay for the process

Years ago, "external growth" was the name of the game. Build buildings. Buy buildings. Better yet, buy whole real estate companies. These days, high vacancy has put a damper on rental rates and speculative building. At the same time, low interest rates have made it difficult to purchase existing buildings at reasonable prices. Now, internal

growth is the more sensible strategy to pursue: lower operating expenses, improve tenant attraction and retention, and do anything else that improves the profitability of assets.

The smart money is reallocating dollars that had been reserved for increasing the size of the portfolio to initiatives that upgrade the infrastructure (and profitability) of properties already there. This new focus on internal growth provides an excellent environment for carefully selecting and funding expense-reducing capital projects where the benefits inure to the real estate investor.

The people whose job it is to identify potential projects need to know how much capital is available for energy-saving upgrades that meet or exceed the organization's hurdle rate. If the people closest to the

buildings don't understand the investment criteria being used, senior management should educate them.

No one knows the buildings better than the people who operate them day-to-day, and they can provide valuable advice in screening and evaluating projects. Those same people should be kept in the loop right through the end so that they see how their engineering recommendations are combined with leasing, finance, and other inputs to select the most-worthy projects.

Many organizations default to simple payback period for ranking projects because it is relatively easy for non-financial professionals to calculate and communicate. Unfortunately, simple payback is one of the worst metrics to use when selecting which projects to approve in income properties.

In any organization, certain criteria must be met before a project can win approval. These criteria should be agreed upon in advance, and ranked in the order of "least-expensive-to-study" to "most-expensive-to-study." The goal here is to evaluate the entire universe of properties and possible projects, eliminating the least attractive ones quickly and inexpensively.

One approach that works well is to commission an inexpensive property survey that assigns a score to:

- Technical potential to improve energy efficiency
- Utility cost intensity on a per-unit basis
- Availability of rebates and other incentives to improve project profitability

In the case of income-producing portfolios, those buildings that receive the highest score would also receive a preliminary leasing survey to discover whether:

- The expense-sharing provisions of the existing leases would likely allocate enough of the savings to the owner to justify the upgrade
- There are any cap-ex-cost-recovery provisions in the existing leases that would permit the owner to assess tenants for some or all of the upgrade's cost

It is critical that this survey be designed and administered by consulting professionals who specialize in both energy-efficiency engineering and the dynamics of leased buildings.

The leasing survey should

address how utilities are metered and billed throughout the property, the types of expense-sharing and capital-cost-recovery provisions contained in existing leases, length of leases remaining, and other factors relevant to allocating the costs and benefits of a potential upgrade.

Only those properties that receive high scores in this pre-screening phase should progress to the following more expensive activities. The first follow-up activity should be an on-site visit to verify any upgrade potential suggested by the remote survey. Often, additional energy-saving strategies are revealed during the physical inspection.

For those buildings that still appear promising after the walk-through, detailed quantitative "investment-grade" engineering analyses can be undertaken with the confidence that there is a high probability that these will lead to the implementation of cost-effective projects. By limiting the cost of performing energy analyses to only those properties that have cleared the inexpensive screening process, the cost of the decision-making process will be minimized.

Once projects are well defined from an engineering standpoint, the estimated construction costs and projected savings need to be inserted into an income-property-specific

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investment-grade financial analysis. A leasing analysis will allocate the projected costs/benefits between the owner and tenants. A property valuation analysis will translate the owner's share of lower operating expenses into higher appraised value. At this point, sensitivity analysis can be done to explore how changes in vacancy rate, holding period, and other factors would influence the owner's rate of return.

Care must be taken to reframe costs and benefits into a value proposition that is compelling to a professional real-estate investor. Whether the decision involves purchasing a new building or making

an existing asset more profitable with expense-reducing capital improvements, the more detailed and substantiated the costs and benefits, the easier it is for a capital budgeting officer to be confident in the final decision.

The analysis should be income-property specific and describe how the lease allocates costs and benefits. If the upgrade is expected to improve occupant comfort or lower tenant operating costs significantly enough to enhance tenant retention or attraction, that benefit should be quantified and highlighted. If the upgrade is estimated to reduce the owner's share of building operating expenses, that benefit should be quantified right through to the calculation of higher net operating income and asset value. Of course, the timing of cash inflows and outflows are very important to real estate investors, so all costs and benefits should be mapped on an investment time line, summed by month and year, and then translated into present values (see sidebar "Discounted Cash Flow").

Each year, utilities and other agencies offer over \$1 billion in rebates and other incentives to help study and implement energy- and water-efficiency improvements. Subsidies might be available to help pay for the detailed engineering and financial analyses of projects that make it past preliminary screening. Rebates might be available to help pay for the actual installation of projects that are finally approved. The project selection process should incorporate the research and capture of these dollars, as they can only make it easier to uncover worthwhile projects and get them approved. [eun](#)

**About the Author:** Bringing the perspective that comes with 20 years in commercial real estate and 10 years in energy efficiency, **Mark Jewell**, founder and CEO of RealWinWin ([mjewell@realwinwin.com](http://mjewell@realwinwin.com)), is a national expert on the role of energy-efficiency economics in commercial real estate. Jewell's ideas have already been transformed into best practices by many large institutions and are helping to shape the way people view energy efficiency in commercial real estate. RealWinWin ([www.realwinwin.com](http://www.realwinwin.com)) specializes in helping both income-producing and owner-occupied properties create value with efficiency with tools like Building Triage, NOI Builder, and Rebate Administration.

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## Discounted Cash Flow Analysis

Discounted cash flow analysis is the "mother's milk" of real estate investors. An investment recommendation will not be taken seriously unless the projected costs and benefits are expressed as cash outflows and inflows over time, each of which is "discounted back to Date 0," otherwise known as the "present value" or "PV."

Simply put, a discount rate is an interest percentage that equates the value of a dollar received one year in the future to its value today. Hence, a discount rate of 10% would make \$1 received one year in the future roughly equivalent to \$0.91 today, because if one took \$0.91 and invested it in an account yielding 10% per year, it would grow to \$1 in one year.

For capital projects that span multiple years, discount rates must be compounded. For example, a cash flow that occurs two years in the future is divided by  $(1 + 10\%)^2$ , meaning that each dollar received at the end of Year 2 is equivalent to approximately \$0.83 today.

The concept of discounting applies to both cash outflows and cash inflows, and a timeline must be created, showing each cash flow at each point along the timeline. Finally, the outflows and inflows for each year should be combined, so that each of those yearly totals can be reduced to present value using the agreed upon discount rate and compounding where necessary.

Income-producing properties have leases that allocate the costs and

benefits of upgrades between owner and tenants. Any discounted cash flow analysis should be done after each of the cash outflows and inflows have been allocated between the parties. More specifically, both the proposed capital expenditure and the projected savings must be allocated on a month-by-month, tenant-by-tenant, and common-area basis, and each amount must then be entered at the appropriate position on the project timeline. Any portions of the cap ex that can be passed through to the tenants should be reflected as cash inflows to the owner in the years in which they occur. Similarly, any portions of the cap ex that cannot be passed through to the tenants should be entered as cash outflows where appropriate on the timeline.

A discounted cash flow analysis for an income-producing property would be incomplete without considering any increase in property value that results if some of the project's annual savings inure to the owner. A decrease in the owner's share of operating expenses typically boosts the property's net operating income (NOI). This higher NOI can support an increase in the appraised value of the property, which should be included as a cash inflow in the year in which the owner expects to sell or refinance the property. Of course, the longer the owner waits to capture this increase in equity, the less it would be worth in present value terms.

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