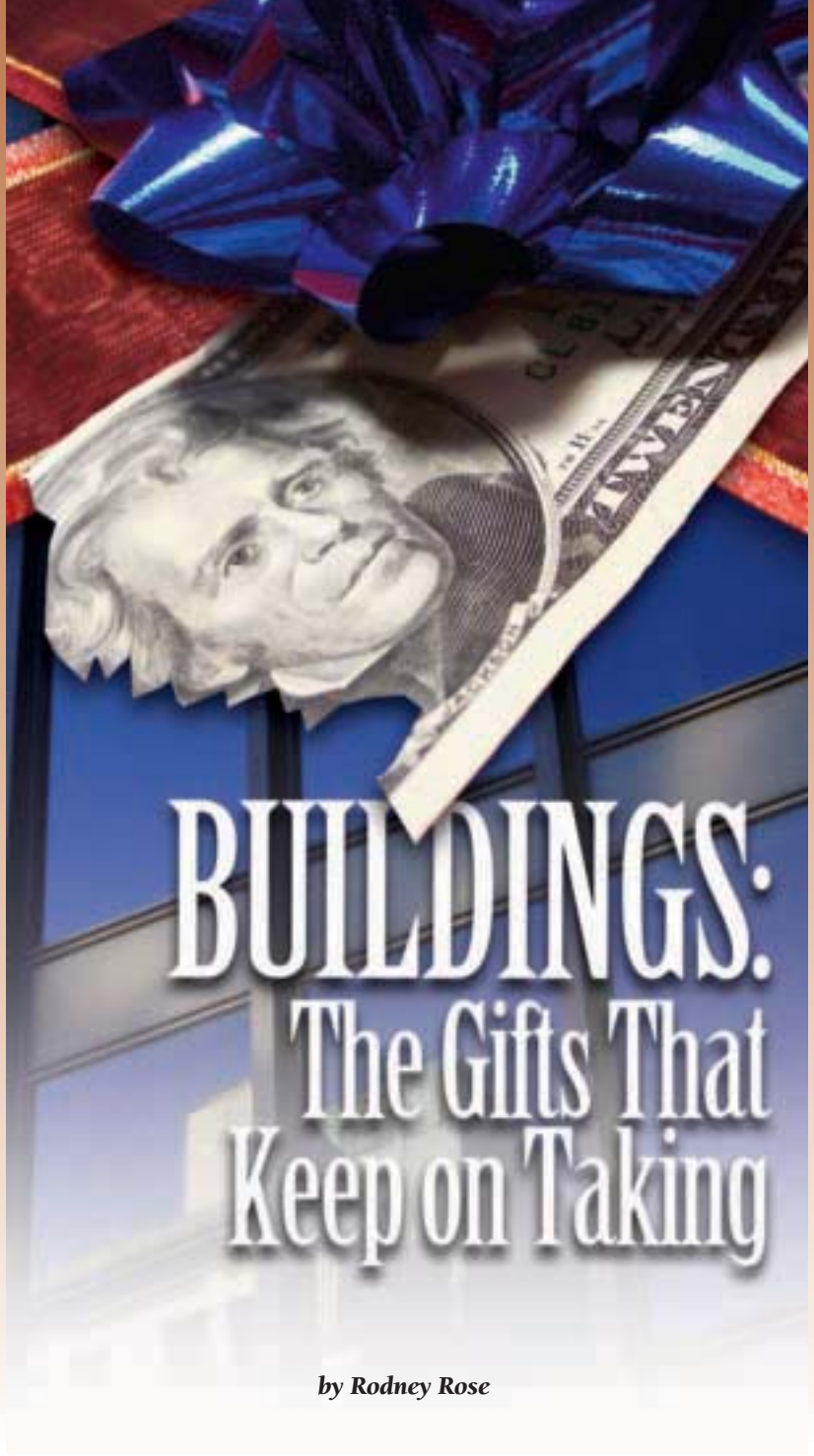

BUILDINGS: The Gifts That Keep on Taking

by Rodney Rose

A philanthropist agrees to provide $15 million toward the cost of a new $50-million building for a public university's law school. The institution must still raise the balance and cover the costs of ongoing maintenance, operations, and capital renewal—and hope to get some commitment of state funds.

At another university, students vote in favor of increasing fees by $10 per semester to raise the funds needed for a new, state-of-the-art $35-million recreation center. The facility will have two Olympic-sized indoor pools; Jacuzzis; a climbing wall; a fitness center; a running track; basketball and racquetball courts; rooms for video games and meetings; and a small café. However, the students who voted for the increase will not have to pay the additional fees they approved, because they will have graduated long before the facility is to be completed. The additional fees will be added to the tuition of future generations of students. The institution and its student government association will also assume the ongoing responsibility for the costs of operations and maintenance of the recreation center.

These examples represent business as usual for higher education institutions. With some exceptions—such as revenue-generating facilities like residence halls or parking structures that are often built with debt-financing structures that require a reserve for major maintenance over the term of a loan—colleges and universities struggle to provide adequate funds for these costs. Moreover, these expenses can easily exceed three times the cost of initial design and construction of the facility.

Higher education institutions spend about $20 billion annually on facilities operations including the cost required for maintenance, energy, and utilities—and between $15 billion and $18 billion annually for the construction of new facilities and/or the renovation of existing buildings. College and university campuses provide more than five billion square feet of floor space in 240,000 buildings, which have a current replacement value (CRV) that is estimated at more than $700 billion, excluding utilities infrastructure, roads, and landscaping. In addition, there is a backlog in deferred maintenance estimated at more than $36 billion, or 5 percent of CRV. [These numbers are extrapolated from a 1995 APPA/ NACUBO/Sallie Mae study.]

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For most colleges and universities, facilities are not only places that house programs and services. The physical campus is a large part of the fundamental nature of the institution, embedded in the image it presents to faculty, students, and graduates, as well as the local community where the campus is located. Yet, decision makers at all levels of the institution—chief executive officers, Boards of Trustees or Regents, legislators, and facility asset managers—are increasingly concerned about their inability to control both the initial and long-term costs of facilities. These concerns are exacerbated by inadequate funding for maintenance, deterioration of the basic infrastructure of the facilities, and the increasing demands of technology. Much of the problem is driven by an increase in the number of older buildings and the significant costs of capital renewal—the need to replace major components of a facility based on the life cycle of buildings and their subsystems.

These are not new issues. Examples of construction projects that exceed their budgets by millions, or even hundreds of millions, of dollars abound in major public works projects and in a significant number of projects within higher education institutions. The backlog of deferred maintenance continues to increase in spite of decades of books, articles, and unpublished reports from a variety of institutions and government agencies that cite, in substantial detail, the costs and impacts of failing to apply the resources needed to repair and replace buildings and their basic infrastructure. At the same time, new construction continues, driven by increasing demand and growth; new programs and services; advanced technologies; and the need for economic, cultural, and social development. These drivers of construction apply to every aspect of society, in most communities, and in every part of the world.

APPA's new book, *Buildings…The Gifts That Keep on Taking: A Framework for Integrated Decision Making,* is, in large part, a report of the findings of a three-year project sponsored by APPA's Center for Facilities Research (CFaR). The purpose of the research was to examine executive-level decision making regarding facilities. What are the most basic questions that policy makers ask before investing in facilities? What factors influence those decisions? To what extent do these decisions rely on metrics or facilities planning and management models? What can facilities directors and professionals do to help policy makers make better decisions about what and when to build or renovate and how to acquire and spend resources on facilities?

Over the course of the research, performed between 2003 and 2006, the research team conducted interviews and meetings with senior executives of higher education institutions, including institutional business officers, presidents, chancellors, and department heads, and with facilities professionals, including directors, architects, engineers, planners, and private firms that specialize in all aspects of the design, planning, and management of facilities. These representatives exhibited a clear and broad consensus on the most important issues that decision makers must address:

- the need to gain more control of initial and long-term costs
- the need to improve the predictability of desired outcomes
- a rational basis for determining priorities
- cost-effective and more adaptable facilities
- improved use and functionality of space
- improved accountability to the institution's trustees and regents as well as legislators and the public at large
- the importance of attracting support and resources for facilities, including those needed for new construction, renovation, maintenance, and renewal.

The common thread among all of the issues and concerns raised during research for the book is that facilities decisions must be cast in light of their value as an investment. The discussion of facilities is primarily focused on costs, especially initial costs. And the lengthy and complex process of planning, designing, and building facilities—which can take many years for complex projects—results in unforeseen changes and frustration along with the anticipation of finally getting something new built.

Facilities portfolio managers and institutional decision makers require a comprehensive asset investment strategy—a set of integrated decisions that take into account the need and priority for construction and renovation, the total costs of ownership, and the impacts of alternative investment choices on the institution's basic mission and objectives.

However, integrated decision making is not the norm in most institutional and governmental environments. More typically, basic funding for operations and capital budgets is distinct and usually separate, as are decisions regarding organizational responsibility and staffing.

In colleges and universities, many facilities are custom-designed or built to suit specialized uses, which are determined by current users or stakeholders who may or may not have a perspective on long-term future needs—a circumstance that tends to minimize rather than optimize long-term flexibility in the use and function of spaces.

Design and construction costs are considered one-time capital investment costs and typically require funds from sources that are separate from those that fund operating budgets. Maintenance and operations of facilities are usually financed from the same sources of general funds that support ongoing institutional operations—such as faculty salaries, departmental operating expenses, and libraries—and do not include the costs of capital renewal, major repairs, and replacement of systems. Costs related to ongoing space management, facilities planning, or other planning activities are usually considered institutional overhead and unrelated to the costs of maintaining and operating facilities.

The decisions to determine needs, priorities, and the extent of the investment required for facilities and major equipment are not unique to college and university campuses. The same

decision-making criteria are applicable to all organizations responsible for significant facilities portfolios, including federal and state agencies, school districts, and many corporations as well.

For this research, the intent of CFaR was to collect and consolidate what are generally believed to be best practices for facilities planning and management—including common terms, definitions, and metrics—and to translate them into a manageable, readily understood, and easily articulated set of factors to be taken into account when making decisions about investing in facilities. These factors were reviewed and tested with representatives of higher education institutions and government agencies—senior staff, executive and financial officers, members of governing boards, and facilities directors and managers—to determine if they provide an effective and useful decision-making framework for evaluating facilities investment alternatives that can support their institution's mission and help achieve its long-term goals.

However, it is not the intent of this research—or the book—to develop or define a new "universal model" that could be used for the oversight of any institution or facilities portfolio. Rather, APPA hopes that the findings and recommendations offered here will raise the profile or visibility of these methodologies so that more institutions or agencies will seek out these best practices and use them in their respective organizations to improve the decision-making process involved in investing in their facilities.

The Strategic Investment Pyramid

What elements are critical for a clear and effective asset investment strategy for facilities management? A sound strategy takes into account critical factors or decision tools that will help institutional executives and facilities professionals work together in an effort to establish and maintain an organizational, financial, and cultural environment in which integrated decision-making about facilities is the norm and an environment of stewardship is the goal.

To start with, all decision makers should consider some basic strategic questions before initiating any investment in an institution's facilities. The new book provides a list of 50 basic policy questions that are most commonly asked by those involved in the decision-making process related to entire capital programs and specific capital projects. When taken as a whole, the items in the list can be boiled down to only four questions—the questions that are the most critical to address as part of any asset investment strategy:

- Why should we invest?
- What can we afford?
- Where and when should we invest?
- How much should we invest?

Together, these basic questions form the foundation elements of a Strategic Investment Pyramid—a conceptual framework that supports and enhances integrated decision making regarding any investment in facilities. (Illustrated on page 22.) "Integrated" means a process that takes into consideration the operational, programmatic, long- and short-term influences, and impacts of each prospective investment.

Methodology for Determining Strategic Priorities

Experience suggests that priorities for facilities expenditures are either determined by executive judgment or delegated to facilities professionals based on whatever criteria govern the resources they control. For example, strategic facilities investment—like major new construction or renovation or leasing off-campus space—are often driven by subjective criteria, such as a new funding opportunity or gift, a department's need to accommodate new teaching or research programs, or unmet needs that have reached a state of urgency. Sorting out these priorities usually involves high-level discussions among deans, department heads, provosts, business officers, and presidents.

On the other hand, an institution's administrators usually leave it to facilities professionals to deal with the usually long list of improvements that need to be made to facilities—replacing electrical, mechanical, or plumbing systems; improving the landscape in front of a building; or installing a new air conditioning system, for example—and to set priorities based on management oversight and inspection activities that are part of facilities managers' responsibilities. In both cases, administrators are faced with an annual wish list that is put in some kind of priority order and is always much longer than the available resources can accommodate.

Yet, some universities and federal agencies have developed relatively simple—but more objective—decision tools for determining priorities for facilities. These tools are not used to replace the judgment of agency or institutional leaders but to complement it. Each of these methods directly aligns facility priorities with the institution's mission or programmatic criticality. The uses of indexes such as the U.S. Coast Guard's Mission Dependency Index (MDI), the U.S. Department of the Interior's Asset Priority Index (API), and Brigham Young University's systems-based priority approach are detailed in chapter 4 of the new book.

Objective priority-setting methods used in concert with the judgment of executives who have a wide perspective on institutional goals and objectives will result in better decisions about the priority of investments in facilities.

Integrated Decision Making

The top of the Strategic Investment Pyramid represents the coming together of all the critical layers of information into an integrated investment strategy. Such a strategy might involve multiple scenarios or plans, such as plans for ongoing maintenance and operations, capital renewal, new construction, or reallocation and reutilization of existing space. Of course, these plans must be reviewed periodically and aligned with the strategic or business plan for the entire institution. Nevertheless, the strategy should always focus on the expected return on the investment in facilities and should be stated in terms of measurable business or institutional outcomes. It is the expected achievement of those outcomes that will enhance the attraction of resources and support for both programs and facilities.

Facilities portfolio managers and institutional decision makers require a comprehensive asset investment strategy—a set of integrated decisions that take into account the need and priority for construction and renovation, the total costs of ownership, and the impacts of alternative investment choices on the institution's basic mission and objectives.

Effective use of the Strategic Investment Pyramid has a number of significant benefits. It focuses on the investment value of facilities and promotes integrated planning and budgeting, providing an excellent tool for making the business case for alternative solutions to facility needs—including the alternative to decide that no project will be undertaken. Using the pyramid approach allows the data and analytical requirements to be easily collected and readily organized into typical accounting and financial structures and also promotes the application of reasonable standards and benchmarks across multiple institutions, within a given institution, and for specific buildings, including infrastructure elements.

Recommendations for an Asset Investment Strategy

The research conducted by CFaR identified a number of key recommendations or initiatives that institutional leaders and organizations can implement to support the development of an asset investment strategy and to maintain a culture of stewardship:

1. Institutions should establish a reserve account for maintenance and capital renewal as part of the initial agreement to build and/or finance a facility.
2. Cost-effective approaches that are more common in the private sector should be encouraged within both higher education and government agency environments. In addition, standards should be developed to reduce the need for customized design and frequent remodeling of spaces. These measures can help mitigate the impact of changes in program focus and technology developments over time.
3. New construction should be evaluated in light of existing capital renewal needs, requirements for ongoing maintenance and operations, and alternatives for reallocation or renovation of space.
4. Facility condition assessments should include a methodology for determining priorities for buildings and systems that can be related to program or mission goals.
5. To enhance and support decision processes related to facilities, wherever possible, institutions should explore and use the excellent facilities models that private firms and consultants, government agencies, and many higher education institutions have developed to predict and manage capital renewal and deferred

Obviously, most institutions find it difficult to turn down a generous offer to fund a new building. Donors nearly always want to maximize the amount of space built, expecting the recipient college or university to find the means to operate and maintain the programs that will occupy the building and to finance its maintenance and capital renewal requirements.

maintenance needs. Most of these models are as adaptable to small private colleges as they are to large public universities.

6. Facilities planning, management, and/or investment strategies should always be linked to the institution's mission and goals. These links should be articulated clearly in an institutional strategic plan.

Obviously, most institutions find it difficult to turn down a generous offer to fund a new building. Donors nearly always want to maximize the amount of space built, expecting the recipient college or university to find the means to operate and maintain the programs that will occupy the building and to finance its maintenance and capital renewal requirements. But because those costs *far exceed* initial design and construction costs, it is imperative to hold frank discussions about the implications of the *total cost of ownership* before initiating a major capital investment.

This situation poses a challenge not only for higher education institutions but also for cities, school districts, religious and nonprofit organizations, and even some government agencies, which are frequently faced with the same dilemma: the desire to take advantage of a gift, a public bond referendum, or a new federal program that would provide a facility that could not otherwise be built. But the big "catch" is the need to commit to the long-term operating costs, which are, more often than not, the most difficult costs to provide and the costs that endure over time.

The establishment of an asset investment strategy for a facilities portfolio will provide a significant benefit to decision makers, particularly if that strategy is reviewed and updated regularly. Such a strategy can create a firm foundation for those whose job it is to plan and maintain facilities as well as for the consultants, architects, engineers, and contractors in the industry who design and construct the buildings. And—perhaps most importantly—an asset investment strategy will lay a solid basis for decision making for those boards, legislatures, trustees, and others who must be convinced to locate and maintain the resources that are needed to support the facilities portfolio over time.